DOP 4 - 021 - 160089 - 2024/01

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

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Leistungserklärung

Nr.: **4 - 021 - 160089 - 2024/01**

1.) Eindeutiger Kenncode des Produkttyps:

Injektionssystem EJOT Multifix Vinylester / Sormat ITH Vinylester für Mauerwerk (033)

2.) Verwendungszweck:

Metall-Injektionsdübel zur Verankerung im Mauerwerk

3.) Hersteller:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) System zur Bewertung und Überprüfung der Leistungsbeständigkeit:

System 1

5.)

Europäisches Bewertungsdokument	**EAD 330076-01-0604**
Europäisch Technische Bewertung:	**ETA-16/0089**
Technische Bewertungsstelle:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Notifizierte Stelle:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Erklärte Leitung(en):

a) Mechanische Festigkeit und Standsicherheit (BWR 1) und Sicherheit bei der Nutzung (BWR 4)

Wesentliche Merkmale	Leistungswerte
Charakteristischer Widerstand für statische und quasistatische Einwirkungen	Siehe Anhang B 5, B 6, C 1 bis C 56
Charakteristischer Widerstand und Verschiebungen für seismische Einwirkung	Leistung nicht bewertet

Leistungserklärung

Nr.: **4 - 021 - 160089 - 2024/01**

EJOT®

b) Brandschutz (BWR 2)

Wesentliche Merkmale	Leistungswerte
Brandverhalten	Klasse A1
Feuerwiderstand unter Zug- und Querbeanspruchung mit und ohne Hebelarm. Minimale Achs- und Randabstände	Siehe Anhang C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 und C52

c) Hygiene, Gesundheit und Umweltschutz (BWR 3)

Wesentliche Merkmale	Leistungswerte
Inhalt, Emission und/oder Freisetzung von gefährlichen Stoffen	Leistung nicht bewertet

d) Schallschutz (BWR 5)

Wesentliche Merkmale	Leistungswerte

e) Energieeinsparung und Wärmeschutz (BWR 6)

Wesentliche Merkmale	Leistungswerte

f) Nachhaltige Nutzung der natürlichen Ressourcen (BWR 7)

Wesentliche Merkmale	Leistungswerte

Die Leistung des vorstehenden Produkts entspricht der erklärten Leitung/den erklärten Leistungen. Für die Erstellung der Leistungserklärung im Einklang mit der Verordnung (EU) Nr. 305/2011 ist allein der oben genannte Hersteller verantwortlich.

Unterzeichnet für den Hersteller und im Namen des Herstellers von:

Dr. Jens Weber
(Name)

Bad Laasphe, 28.01.2025
(Ort und Datum der Ausstellung)

(Unterschrift)

Declaration of Performance

No **4 - 021 - 160089 - 2024/01**

1.) Unique identification code of the product-type:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Intended use:

Metal Injection anchors for use in masonry

3.) Manufacturer:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) System of AVCP:

System 1

5.)

European Assesment Document:	**EAD 330076-01-0604**
European Technical Assessment:	**ETA-16/0089**
Technical assessment body:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Notified body:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Declared Performance:

a) Mechanical resistance and stability (BWR 1) and safety and accessibility (BWR 4)

Essential characteristic	Performance
Characteristic resistance for static and quasi-static loading	See Annexes B 5, B 6, C 1 to C 56
Characteristic resistance and displacements for seismic loading	No performance assessed

Declaration of Performance

No **4 - 021 - 160089 - 2024/01**

EJOT®

b) Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire under tension and shear loading with and without lever arm. Minimum edge distances and spacing	See Annexes C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44,

c) Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content, emission and/or release of dangerous substances	No performance assessed

d) Protection against noise (BWR 5)

Essential characteristic	Performance

e) Energy economy and heat retention (BWR 6)

Essential characteristic	Performance

f) Sustainable use of natural resources (BWR 7)

Essential characteristic	Performance

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

Dr. Jens Weber
(Name)

Bad Laasphe, 28.01.2025
(Place and date of issue)

(Signature)

ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ **4 - 021 - 160089 - 2024/01**

1.) Уникален идентификационен код на типа продукт:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Предвидена употреба/употреби:

Метални анкери за инжектиране за използване в зидария

3.) Производител:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Система/системи за оценяване и проверка на постоянството на експлоатационните показатели:

Сиситема 1

5.)

Европейски документ за оценяване:	**EAD 330076-01-0604**
Европейска техническа оценка:	**ETA-16/0089**
Орган за техническа оценка:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Нотифициран орган/органи:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Декларирани експлоатационни показатели:

a) Механична устойчивост и стабилност (BWR 1) и безопасност и достъпност (BWR 4)

Основни характеристики	Показатели
Характерна устойчивост при статично и квазистатично натоварване	Вж. приложения Б 5, Б 6, В 1 до В 56
Характерни съпротивления и премествания за сеизмични натоварване	Няма оценка на изпълнението

ДЕКЛАРАЦИЯ ЗА ЕКСПЛОАТАЦИОННИ ПОКАЗАТЕЛИ

№ **4 - 021 - 160089 - 2024/01**

EJOT®

b) Безопасност в случай на пожар (BWR 2)

Основни характеристики	Показатели
Реакция при пожар	Клас A1
Устойчивост на огън при натоварване на опън и срязване с и без рамо на лоста. Минимални разстояния между ръбовете и разстояния между тях	Вж. приложения C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 и C52.

c) Хигиена, здраве и околна среда (BWR 3)

Основни характеристики	Показатели
Съдържание, емисии и/или изпускане на опасни вещества	Няма оценка на изпълнението

d) Защита от шум (BWR 5)

Основни характеристики	Показатели

e) Икономия на енергия и запазване на топлината (BWR 6)

Основни характеристики	Показатели

f) Устойчиво използване на природните ресурси (BWR 7)

Основни характеристики	Показатели

Експлоатационните показатели на продукта, посочени по-горе, са в съответствие с декларираните експлоатационни показатели. Настоящата декларация за експлоатационни показатели се издава в съответствие с Регламент (ЕС) № 305/2011, като отговорността за нея се носи изцяло от посочения по-горе производител.

Подписано за и от името на производителя от:

Dr. Jens Weber
(Име)

Bad Laasphe, 28.01.2025
(Място и Дата)

(Подпис)

PROHLÁŠENÍ O VLASTNOSTECH

č. **4 - 021 - 160089 - 2024/01**

1.) Jedinečný identifikační kód typu výrobku:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Zamýšlené/zamýšlená použití:

Kovové injektážní kotvy pro použití ve zdivu

3.) Výrobce:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Systém/systémy POSV:

Systém 1

5.)

Evropský dokument pro posuzování:	**EAD 330076-01-0604**
Evropské technické posouzení:	**ETA-16/0089**
Subjekt pro technické posuzování:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Oznámený subjekt/oznámené subjekty:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklarovaná vlastnost/Deklarované vlastnosti:

a) Mechanická odolnost a stabilita (BWR 1) a bezpečnost a dostupnost (BWR 4)

základní charakteristiky	vlastnosti výrobku
Charakteristická odolnost při statickém a kvazistatickém zatížení	Viz přílohy B 5, B 6, C 1 až C 56.
Characteristic resistance and displacements for seismic loading	Žádný hodnocený výkon

PROHLÁŠENÍ O VLASTNOSTECH

č. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Bezpečnost při požáru (BWR 2)

základní charakteristiky	vlastnosti výrobku
Reakce na oheň	Třída A1
Odolnost proti požáru při zatížení tahem a smykem s a bez ramene páky. Minimální vzdálenosti a rozteče hran	Viz přílohy C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 a C52.

c) Hygiena, zdraví a životní prostředí (BWR 3)

základní charakteristiky	vlastnosti výrobku
Obsah, emise a/nebo uvolňování nebezpečných látek	Žádný hodnocený výkon

d) Ochrana proti hluku (BWR 5)

základní charakteristiky	vlastnosti výrobku

e) Úspora energie a zadržování tepla (BWR 6)

základní charakteristiky	vlastnosti výrobku

f) Udržitelné využívání přírodních zdrojů (BWR 7)

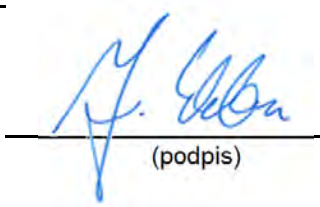
základní charakteristiky	vlastnosti výrobku

Vlastnosti výše uvedeného výrobku jsou ve shodě se souborem deklarovaných vlastností. Toto prohlášení o vlastnostech se v souladu s nařízením (EU) č. 305/2011 vydává na výhradní odpovědnost výrobce uvedeného výše.

Podepsáno za výrobce a jeho jménem:

Dr. Jens Weber
(jméno)

Bad Laasphe, 28.01.2025
(místo a datum vydání)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YDEEVNEDEKLARATION

Nr.: **4 - 021 - 160089 - 2024/01**

1.) Varetypens unikke identifikationskode:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Tilsigtet anvendelse:

Injektionsankre af metal til brug i murværk

3.) Fabrikant:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) System eller systemer til vurdering og kontrol af konstansen af ydeevnen:

System 1

5.)

Europæisk vurderingsdokument:	**EAD 330076-01-0604**
Europæisk teknisk vurdering:	**ETA-16/0089**
Teknisk vurderingsorgan:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Notificeret organ/notificerede organer:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklareret ydeevne/deklarerede ydeevner:

a) Mekanisk modstand og stabilitet (BWR 1) og sikkerhed og tilgængelighed (BWR 4)

Væsentlige egenskaber	Ydelse
Karakteristisk modstand ved statisk og kvasistatisk belastning	Se bilag B 5, B 6, C 1 til C 56
Karakteristisk modstand og forskydninger for seismisk loading	Ingen præstation vurderet

YDEEVNEDEKLARATION

Nr.: **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sikkerhed ved brand (BWR 2)

Væsentlige egenskaber	Ydelse
Reaktioner på brand	Klasse A1
Modstandsdygtighed over for brand under træk- og forskydningsbelastning med og uden løftestang. Minimum kantafstande og mellemrum	Se bilag C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 og C52.

c) Hygiejne, sundhed og miljø (BWR 3)

Væsentlige egenskaber	Ydelse
Indhold, udledning og/eller frigivelse af farlige stoffer	Ingen præstation vurderet

d) Beskyttelse mod støj (BWR 5)

Væsentlige egenskaber	Ydelse

e) Energibesparelser og varmebinding (BWR 6)

Væsentlige egenskaber	Ydelse

f) Bæredygtig udnyttelse af naturressourcer (BWR 7)

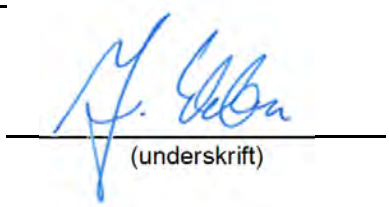
Væsentlige egenskaber	Ydelse

Ydeevnen for den vare, der er anført ovenfor, er i overensstemmelse med den deklarerede ydeevne. Denne ydeevnedeklaration er udarbejdet i overensstemmelse med forordning (EU) nr. 305/2011 på eneansvar af den fabrikant, der er anført ovenfor.

Underskrevet for fabrikanten og på dennes vegne af:

Dr. Jens Weber
(navn)

Bad Laasphe, 28.01.2025
(sted og dato for udstedelse)


(underskrift)

TOIMIVUSDEKLARATSIOON

nr **4 - 021 - 160089 - 2024/01**

1.) Tootetüübi kordumatu identifitseerimiskood:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Kavandatud kasutusala(d):

Metallist süstiankrud müüritise sissepanekuks

3.) Tootja:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Toimivuse püsivuse hindamise ja kontrolli süsteem:

Süsteem 1

5.)

Euroopa hindamisdokument:	**EAD 330076-01-0604**
Euroopa tehniline hinnang:	**ETA-16/0089**
Tehnilise hindamise asutus:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Teavitatud asutus(ed):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklareeritud toimivus:

a) Mehaaniline vastupidavus ja stabiilsus (BWR 1) ning ohutus ja juurdepääsetavus (BWR 4)

Põhiomadused	Toimivus
Iseloomulik vastupidavus staatilise ja kvaasistaatilise koormuse korral	Vt lisad B 5, B 6, C 1-C 56.
Seismilise vastupidavuse ja nihkete iseloomulikud omadused koormus	Tulemuslikkust ei ole hinnatud

TOIMIVUSDEKLARATSIOON

nr **4 - 021 - 160089 - 2024/01**

EJOT®

b) Ohutus tulekahju korral (BWR 2)

Põhiomadused	Toimivus
Reaktsioon tulekahjule	Klass A1
Tulepüsivus pinge- ja nihkekoormuse korral koos ja ilma hoovavarrega. Minimaalsed serva kaugused ja vahekaugused	Vt lisad C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 ja C52.

c) Hügieen, tervis ja keskkond (BWR 3)

Põhiomadused	Toimivus
Ohtlike ainete sisaldus, heide ja/või vabanemine	Tulemuslikkust ei ole hinnatud

d) Kaitse müra eest (BWR 5)

Põhiomadused	Toimivus

e) Energiasääst ja soojapidavus (BWR 6)

Põhiomadused	Toimivus

f) Loodusvarade säästev kasutamine (BWR 7)

Põhiomadused	Toimivus

Eespool kirjeldatud toote toimivus vastab deklareeritud toimivusele. Käesolev toimivusdeklaratsioon on välja antud kooskõlas määrusega (EL) nr 305/2011 eespool nimetatud tootja ainuvastutusel.

Tootja poolt ja nimel allkirjastanud:

Dr. Jens Weber
(Nimi)

Bad Laasphe, 28.01.2025
(Koht ja kuupäev)

(Allkiri)

DECLARACIÓN DE PRESTACIONES

no **4 - 021 - 160089 - 2024/01**

1.) Código de identificación única del producto tipo:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Usos previstos:

Anclajes de inyección metálicos para mampostería

3.) Fabricante:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Sistemas de evaluación y verificación de la constancia de las prestaciones (EVCP):

Sistema 1

5.)

Documento de evaluación europeo:	**EAD 330076-01-0604**
Evaluación técnica europea:	**ETA-16/0089**
Organismo de evaluación técnica:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Organismos notificados:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Prestaciones declaradas:

a) Resistencia mecánica y estabilidad (BWR 1) y seguridad y accesibilidad (BWR 4)

Características esenciales	Prestaciones
Resistencia característica para cargas estáticas y cuasiestáticas	Véanse los anexos B 5, B 6, C 1 a C 56
Resistencia y desplazamientos característicos para cargas sísmicas sísmica	No se evalúa el rendimiento

DECLARACIÓN DE PRESTACIONES

no **4 - 021 - 160089 - 2024/01**

b) Seguridad en caso de incendio (BWR 2)

Características esenciales	Prestaciones
Reacción al fuego	Clase A1
Resistencia al fuego bajo carga de tracción y cizallamiento con y sin brazo de palanca. Distancias y separaciones mínimas de los bordes	Véanse los anexos C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 y C52.

c) Higiene, salud y medio ambiente (BWR 3)

Características esenciales	Prestaciones
Contenido, emisión y/o liberación de sustancias peligrosas	No se evalúa el rendimiento

d) Protección contra el ruido (BWR 5)

Características esenciales	Prestaciones

e) Ahorro de energía y retención del calor (BWR 6)

Características esenciales	Prestaciones

f) Uso sostenible de los recursos naturales (BWR 7)

Características esenciales	Prestaciones

Las prestaciones del producto identificado anteriormente son conformes con el conjunto de prestaciones declaradas. La presente declaración de prestaciones se emite, de conformidad con el Reglamento (UE) no 305/2011, bajo la sola responsabilidad del fabricante arriba identificado.

Firmado por y en nombre del fabricante por:

Dr. Jens Weber
(nombre)

Bad Laasphe, 28.01.2025
(lugar y fecha de emisión)

(firma)

SUORITUSTASOILMOITUS

Nro **4 - 021 - 160089 - 2024/01**

1.) Tuotetyypin yksilöllinen tunniste:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Aiottu käyttötarkoitus (aiotut käyttötarkoitukset):

Muurauksessa käytettävät metalliset injektioankkurit

3.) Valmistaja:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Suoritustason pysyvyyden arvioinnissa ja varmentamisessa käytetty järjestelmä/käytetyt järjestelmät:

Järjestelmä 1

5.)

Eurooppalainen arviointiasiakirja:	**EAD 330076-01-0604**
Eurooppalainen tekninen arviointi:	**ETA-16/0089**
Teknisestä arvioinnista vastaava laitos:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Ilmoitettu laitos/ilmoitetut laitokset:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Ilmoitettu suoritustaso/ilmoitetut suoritustasot:

a) Mekaaninen kestävyys ja vakavuus (BWR 1) sekä turvallisuus ja saavutettavuus (BWR 4)

Perusominaisuudet	Tuotteen suoritustaso
Ominaiskestävyys staattisessa ja kvasistaattisessa kuormituksessa	Ks. liitteet B 5, B 6, C 1-C 56.
Seismisen maanjäristyksen ominaisvastus ja -siirtymät kuormitus	Suorituskykyä ei ole arvioitu

SUORITUSTASOILMOITUS

Nro **4 - 021 - 160089 - 2024/01**

EJOT®

b) Turvallisuus tulipalon sattuessa (BWR 2)

Perusominaisuudet	Tuotteen suoritustaso
Reagointi tulipaloon	Luokka A1
Palonkestävyys jännitys- ja leikkauskuormituksessa, kun ja kun ilman vipuvarsi. Reunojen vähimmäisetäisyydet ja -välit	Ks. liitteet C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 ja C52.

c) Hygienia, terveys ja ympäristö (BWR 3)

Perusominaisuudet	Tuotteen suoritustaso
Vaarallisten aineiden pitoisuus, päästöt ja/tai vapautuminen	Suorituskykyä ei ole arvioitu

d) Suojaus melua vastaan (BWR 5)

Perusominaisuudet	Tuotteen suoritustaso

e) Energiansäästö ja lämmöntalteenotto (BWR 6)

Perusominaisuudet	Tuotteen suoritustaso

f) Luonnonvarojen kestävä käyttö (BWR 7)

Perusominaisuudet	Tuotteen suoritustaso

Edellä yksilöidyn tuotteen suoritustaso on ilmoitettujen suoritustasojen joukon mukainen. Tämä suoritustasoilmoitus on asetuksen (EU) N:o 305/2011 mukaisesti annettu edellä ilmoitetun valmistajan yksinomaisella vastuulla.

Valmistajan puolesta allekirjoittanut:

Dr. Jens Weber
(nimi)

Bad Laasphe, 28.01.2025
(paikka ja päivämäärä)

(allekirjoitus)

DÉCLARATION DES PERFORMANCES

No **4 - 021 - 160089 - 2024/01**

1.) Code d'identification unique du produit type:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Usage(s) prévu(s):

Ancrages métalliques à injection pour utilisation dans la maçonnerie

3.) Fabricant:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Système(s) d'évaluation et de vérification de la constance des performances:

Système 1

5.)

Document d'évaluation européen:	**EAD 330076-01-0604**
Évaluation technique européenne:	**ETA-16/0089**
Organisme d'évaluation technique:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Organisme(s) notifié(s):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Performance(s) déclarée(s):

a) Résistance mécanique et stabilité (BWR 1) et sécurité et accessibilité (BWR 4)

Caractéristiques essentielles	Performances du produit
Résistance caractéristique pour les charges statiques et quasi-statiques	Voir annexes B 5, B 6, C 1 à C 56
Résistance et déplacements caractéristiques pour les charges sismiques sismique	Pas de performance évaluée

DÉCLARATION DES PERFORMANCES

No **4 - 021 - 160089 - 2024/01**

b) Sécurité en cas d'incendie (REB 2)

Caractéristiques essentielles	Performances du produit
Réaction au feu	Classe A1
Résistance au feu sous charge de traction et de cisaillement avec et sans bras de levier. Distances et espacements minimaux entre les bords	Voir annexes C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 et C52.

c) Hygiène, santé et environnement (REB 3)

Caractéristiques essentielles	Performances du produit
Contenu, émission et/ou rejet de substances dangereuses	Pas de performance évaluée

d) Protection contre le bruit (REB 5)

Caractéristiques essentielles	Performances du produit

e) Économie d'énergie et rétention de la chaleur (REB 6)

Caractéristiques essentielles	Performances du produit

f) Utilisation durable des ressources naturelles (REB 7)

Caractéristiques essentielles	Performances du produit

Les performances du produit identifié ci-dessus sont conformes aux performances déclarées. Conformément au règlement (UE) no 305/2011, la présente déclaration des performances est établie sous la seule responsabilité du fabricant mentionné ci-dessus.

Signé pour le fabricant et en son nom par:

Dr. Jens Weber
(Nom)

Bad Laasphe, 28.01.2025
(Lieu et date)


(Signature)

ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αριθ. **4 - 021 - 160089 - 2024/01**

1.) Μοναδικός κωδικός ταυτοποίησης του τύπου του προϊόντος:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Προβλεπόμενη(-ες) χρήση(-εις):

Μεταλλικά αγκύρια έγχυσης για χρήση σε τοιχοποιία

3.) Κατασκευαστής:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Σύστημα/συστήματα AVCP (αξιολόγηση και επαλήθευση της σταθερότητας της επίδοσης):

σύστημα 1

5.)

Ευρωπαϊκό έγγραφο αξιολόγησης:	**EAD 330076-01-0604**
Ευρωπαϊκή τεχνική αξιολόγηση:	**ETA-16/0089**
Οργανισμός τεχνικής αξιολόγησης:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Κοινοποιημένος(-οι) οργανισμός(-οι):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Δηλωθείσα(-ες) επίδοση(-εις):

a) Μηχανική αντίσταση και σταθερότητα (BWR 1) και ασφάλεια και προσβασιμότητα (BWR 4)

Ουσιώδη χαρακτηριστικά	Απόδοση
Χαρακτηριστική αντοχή για στατική και οιονεί στατική φόρτιση	Βλέπε παραρτήματα Β 5, Β 6, Γ 1 έως Γ 56
Χαρακτηριστικές αντιστάσεις και μετατοπίσεις για σεισμικές φόρτιση	Δεν αξιολογούνται οι επιδόσεις

ΔΗΛΩΣΗ ΕΠΙΔΟΣΕΩΝ

Αριθ. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Ασφάλεια σε περίπτωση πυρκαγιάς (BWR 2)

Ουσιώδη χαρακτηριστικά	Απόδοση
Αντίδραση στη φωτιά	Κατηγορία A1
Αντοχή στη φωτιά υπό εφελκυσμό και διατμητική φόρτιση με και χωρίς μοχλοβραχίονα. Ελάχιστες αποστάσεις και αποστάσεις ακμών	Βλέπε παραρτήματα Γ2, Γ7, Γ8, Γ13, Γ14, Γ17, Γ18, Γ19, Γ20, Γ37, Γ38, Γ43, Γ44, Γ45, Γ46, Γ51 και Γ52.

c) Υγιεινή, υγεία και περιβάλλον (BWR 3)

Ουσιώδη χαρακτηριστικά	Απόδοση
Περιεχόμενο, εκπομπή ή/και απελευθέρωση επικίνδυνων ουσιών	Δεν αξιολογούνται οι επιδόσεις

d) Προστασία από θόρυβο (BWR 5)

Ουσιώδη χαρακτηριστικά	Απόδοση

e) Εξοικονόμηση ενέργειας και συγκράτηση θερμότητας (BWR 6)

Ουσιώδη χαρακτηριστικά	Απόδοση

f) Εξοικονόμηση ενέργειας και συγκράτηση θερμότητας (BWR 7)

Ουσιώδη χαρακτηριστικά	Απόδοση

Η επίδοση του προϊόντος που ταυτοποιείται ανωτέρω είναι σύμφωνη με τη (τις) δηλωθείσα(-ες) επίδοση(-εις). Η δήλωση αυτή των επιδόσεων συντάσσεται, σύμφωνα με τον κανονισμό (ΕΕ) αριθ. 305/2011, με αποκλειστική ευθύνη του κατασκευαστή που ταυτοποιείται ανωτέρω.

Υπογραφή για λογαριασμό και εξ ονόματος του κατασκευαστή από:

Dr. Jens Weber
(όνομα)

Bad Laasphe, 28.01.2025
(τόπος και ημερομηνία έκδοσης)

(υπογραφή)

IZJAVA O SVOJSTVIMA

Br. **4 - 021 - 160089 - 2024/01**

1.) Jedinstvena identifikacijska oznaka vrste proizvoda:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Namjena/namjene:

Sidra za brizganje metala za upotrebu u zidanju

3.) Proizvođač:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Sustav/sustavi za ocjenu i provjeru stalnosti svojstava (AVCP):

Sustav 1

5.)

Europski dokument za ocjenjivanje:	**EAD 330076-01-0604**
Europska tehnička ocjena:	**ETA-16/0089**
Tijelo za tehničko ocjenjivanje:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Prijavljeno tijelo/prijavljena tijela:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Objavljena svojstva:

a) Mehanička otpornost i stabilnost (BWR 1) i sigurnost i pristupačnost (BWR 4)

Bitne karakteristike	Svojstva
Karakteristična otpornost za statičko i kvazistatičko opterećenje	Vidjeti priloge B 5, B 6, C 1 do C 56
Karakteristični otpor i pomaci za seizmičke učitavanje	Nije procijenjena izvedba

IZJAVA O SVOJSTVIMA

Br. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sigurnost u slučaju požara (BWR 2)

Bitne karakteristike	Svojstva
Reakcija na vatru	Klasa A1
Otpornost na vatru pod zatezanjem i posmičnim opterećenjem s i bez poluge. Minimalni razmak između rubova i razmak	Vidjeti priloge C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44,

c) Higijena, zdravlje i okoliš (BWR 3)

Bitne karakteristike	Svojstva
Sadržaj, emisija i/ili ispuštanje opasnih tvari	Nije procijenjena izvedba

d) Zaštita od buke (BWR 5)

Bitne karakteristike	Svojstva

e) Ušteda energije i zadržavanje topline (BWR 6)

Bitne karakteristike	Svojstva

f) Održivo korištenje prirodnih resursa (BWR 7)

Bitne karakteristike	Svojstva

Prije utvrđeno svojstvo proizvoda u skladu je s objavljenim svojstvima. Ova izjava o svojstvima izdaje se, u skladu s Uredbom (EU) br. 305/2011, pod isključivom odgovornošću prethodno utvrđenog proizvođača.

Za proizvođača i u njegovo ime potpisao:

Dr. Jens Weber
(ime)

Bad Laasphe, 28.01.2025
(Mjesto i datum izdavanja)

(potpis)

TELJESÍTMÉNYNYILATKOZAT

Száma: **4 - 021 - 160089 - 2024/01**

1.) A terméktípus egyedi azonosító kódja:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Felhasználás célja(i):

Fém injektálási horgonyok falazatba való beépítéshez

3.) Gyártó:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Az AVCP-rendszer(ek):

rendszer 1

5.)

Az európai értékelési dokumentum:	**EAD 330076-01-0604**
Európai műszaki értékelés:	**ETA-16/0089**
A műszaki értékelést végző szerv:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Bejelentett szerv(ek):	**2873 - IFSW - Technische Universität Darmstadt**

6.) A nyilatkozatban szereplő teljesítmény(ek):

a) Mechanikai ellenállás és stabilitás (BWR 1), biztonság és elérhetőség (BWR 4)

Lényeges termékjellemzők	Termék teljesítménye
Jellemző ellenállás statikus és kvázi-statikus terhelés esetén	Lásd a B 5., B 6., C 1-C 56. mellékletet.
Jellemző ellenállás és elmozdulások a szeizmikus terhelés	Nincs értékelt teljesítmény

TELJESÍTMÉNYNYILATKOZAT

Száma: **4 - 021 - 160089 - 2024/01**

EJOT®

b) Biztonság tűz esetén (BWR 2)

Lényeges termékjellemzők	Termék teljesítménye
Tűzre adott reakció	A1 osztály
Tűzállóság húzó- és nyíróterhelés alatt, és kar nélkül. Minimális éltávolságok és élközök	Lásd a C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 és C52 mellékletet.

c) Higiénia, egészség és környezet (BWR 3)

Lényeges termékjellemzők	Termék teljesítménye
Veszélyes anyagok tartalma, kibocsátása és/vagy kibocsátása	Nincs értékelt teljesítmény

d) Zaj elleni védelem (BWR 5)

Lényeges termékjellemzők	Termék teljesítménye

e) Energiatakarékosság és hővisszatartás (BWR 6)

Lényeges termékjellemzők	Termék teljesítménye

f) A természeti erőforrások fenntartható használata (BWR 7)

Lényeges termékjellemzők	Termék teljesítménye

A fent azonosított termék teljesítménye megfelel a bejelentett teljesítmény(ek)nek. A 305/2011/EU rendeletnek megfelelően e teljesítménynyilatkozat kiadásáért kizárólag a fent meghatározott gyártó a felelős.

A gyártó nevében és részéről aláíró személy:

Dr. Jens Weber
(név)

Bad Laasphe, 28.01.2025
(hely és kiállítás dátuma)

(aláírás)

DICHIARAZIONE DI PRESTAZIONE

N. **4 - 021 - 160089 - 2024/01**

1.) Codice di identificazione unico del prodotto-tipo:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Usi previsti:

Ancoraggi ad iniezione in metallo per l'utilizzo in muratura

3.) Fabbricante:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Sistemi di VVCP:

Sistema 1

5.)

Documento per la valutazione europea:	**EAD 330076-01-0604**
Valutazione tecnica europea:	**ETA-16/0089**
Organismo di valutazione tecnica:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Organismi notificati:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Prestazioni dichiarate:

a) Resistenza meccanica e stabilità (BWR 1) e sicurezza e accessibilità (BWR 4)

Caratteristiche essenziali	Prestazione
Resistenza caratteristica per carichi statici e quasi statici	Cfr. gli allegati B 5, B 6, da C 1 a C 56.
Resistenza e spostamenti caratteristici per il carico sismico". carico sismico	Nessuna prestazione valutata

DICHIARAZIONE DI PRESTAZIONE

N. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sicurezza in caso di incendio (BWR 2)

Caratteristiche essenziali	Prestazione
Reazione al fuoco	Classe A1
Resistenza al fuoco sotto carico di tensione e di taglio con e senza braccio di leva. Distanze minime tra i bordi e spaziatura	Cfr. allegati C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 e C52.

c) Igiene, salute e ambiente (BWR 3)

Caratteristiche essenziali	Prestazione
Contenuto, emissione e/o rilascio di sostanze pericolose	Nessuna prestazione valutata

d) Protezione contro il rumore (BWR 5)

Caratteristiche essenziali	Prestazione

e) Economia energetica e ritenzione di calore (BWR 6)

Caratteristiche essenziali	Prestazione

f) Uso sostenibile delle risorse naturali (BWR 7)

Caratteristiche essenziali	Prestazione

La prestazione del prodotto sopra identificato è conforme all'insieme delle prestazioni dichiarate. La presente dichiarazione di responsabilità viene emessa, in conformità al regolamento (UE) n. 305/2011, sotto la sola responsabilità del fabbricante sopra identificato.

Firmato a nome e per conto del fabbricante da:

Dr. Jens Weber
(nome)

Bad Laasphe, 28.01.2025
(luogo e data del rilascio)

(firma)

EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. **4 - 021 - 160089 - 2024/01**

1.) Produkto tipo unikalus identifikavimo kodas:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Naudojimo paskirtis (-ys):

Metaliniai injekciniai inkarai, skirti naudoti mūre

3.) Gamintojas:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Eksploatacinių savybių pastovumo vertinimo ir tikrinimo sistema (-os):

Sistema 1

5.)

Europos vertinimo dokumentas:	**EAD 330076-01-0604**
Europos techninis įvertinimas:	**ETA-16/0089**
Techninio vertinimo įstaiga:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Notifikuotoji (-osios) įstaiga (-os):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklaruojama (-os) eksploatacinė (-ės) savybė (-ės):

a) Mechaninis atsparumas ir stabilumas (BWR 1) ir saugumas bei prieinamumas (BWR 4)

Esminės charakteristikos	Eksploatacinės savybės
Charakteristinis atsparumas statinei ir kvazistatinei apkrovai	Žr. B 5, B 6, C 1-C 56 priedus.
Charakteristinis atsparumas ir poslinkiai seisminiams poveikiams apkrova	Veiklos rezultatai neįvertinti

EKSPLOATACINIŲ SAVYBIŲ DEKLARACIJA

Nr. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Sauga gaisro atveju (BWR 2)

Esminės charakteristikos	Eksploatacinės savybės
Reakcija į ugnį	A1 klasė
Atsparumas ugniai veikiant tempimo ir šlyties apkrovai su ir be svirties rankenos. Mažiausi atstumai tarp kraštų ir atstumai tarp jų	Žr. priedus C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 ir C52.

c) Higiena, sveikata ir aplinka (BWR 3)

Esminės charakteristikos	Eksploatacinės savybės
Pavojingų medžiagų kiekis, išmetimas ir (arba) išleidimas	Veiklos rezultatai neįvertinti

d) Apsauga nuo triukšmo (BWR 5)

Esminės charakteristikos	Eksploatacinės savybės

e) Energijos taupymas ir šilumos išsaugojimas (BWR 6)

Esminės charakteristikos	Eksploatacinės savybės

f) Tvarus gamtos išteklių naudojimas (BWR 7)

Esminės charakteristikos	Eksploatacinės savybės

Nurodyto produkto eksploatacinės savybės atitinka visas deklaruotas eksploatacines savybes. Ši eksploatacinių savybių deklaracija pateikiama vadovaujantis Reglamentu (ES) Nr. 305/2011, atsakomybė už jos turinį tenka tik joje nurodytam gamintojui.

Pasirašyta (gamintojo ir jo vardu):

Dr. Jens Weber
(vardas)

Bad Laasphe, 28.01.2025
(išdavimo vieta ir data)

(parašas)

EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. **4 - 021 - 160089 - 2024/01**

1.) Unikālais izstrādājuma tipa identifikācijas numurs:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Paredzētais izmantojums:

Metāla injekcijas enkuri izmantošanai mūrī

3.) Ražotājs:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Ekspluatācijas īpašību noturības novērtējuma un pārbaudes (AVCP) sistēma(-as):

Sistēma 1

5.)

Eiropas novērtējuma dokuments:	**EAD 330076-01-0604**
Eiropas tehniskais novērtējums:	**ETA-16/0089**
Tehniskā novērtējuma iestāde:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Paziņotā(-ās) iestāde(-es):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklarētā(-ās) ekspluatācijas īpašība(-as):

a) Mehāniskā izturība un stabilitāte (BWR 1) un drošība un pieejamība (BWR 4)

Būtiskie raksturlielumi	Ekspluatācijas īpašības
Raksturīgā pretestība statiskai un kvazi-statiskai slodzei	Skatīt B 5, B 6, C 1 līdz C 56 pielikumu.
Raksturīgā pretestība un pārvietojumi seismiskajai iedarbībai slodzei	Veiktspēja nav novērtēta

EKSPLUATĀCIJAS ĪPAŠĪBU DEKLARĀCIJA

Nr. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Drošība ugunsgrēka gadījumā (BWR 2)

Būtiskie raksturlielumi	Ekspluatācijas īpašības
Reakcija uz ugunsgrēku	A1 klase
Ugunsizturība pie stiepes un bīdes slodzes ar un bez sviras rokas. Minimālie attālumi starp malām un attālumi	Skatīt C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 un C52 pielikumu.

c) Higiēna, veselība un vide (BWR 3)

Būtiskie raksturlielumi	Ekspluatācijas īpašības
Bīstamu vielu saturs, emisija un/vai izdalīšanās	Veiktspēja nav novērtēta

d) Aizsardzība pret troksni (BWR 5)

Būtiskie raksturlielumi	Ekspluatācijas īpašības

e) Enerģijas ekonomija un siltuma saglabāšana (BWR 6)

Būtiskie raksturlielumi	Ekspluatācijas īpašības

f) Dabas resursu ilgtspējīga izmantošana (BWR 7)

Būtiskie raksturlielumi	Ekspluatācijas īpašības

Iepriekš norādītā izstrādājuma ekspluatācijas īpašības atbilst deklarēto ekspluatācijas īpašību kopumam. Šī ekspluatācijas īpašību deklarācija izdota saskaņā ar Regulu (ES) Nr. 305/2011, un par to ir atbildīgs vienīgi iepriekš norādītais ražotājs.

Parakstīts ražotāja vārdā:

Dr. Jens Weber
(Vārds)

Bad Laasphe, 28.01.2025
(Izsniegšanas vieta un datums)

(Paraksts)

DIKJARAZZJONI TA' PRESTAZZJONI

Nru. **4 - 021 - 160089 - 2024/01**

1.) Kodiċi uniku ta' identifikazzjoni tat-tip tal-prodott:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Użu/i intenzjonat/i:

Ankri tal-injezzjoni tal-metall għall-użu fil-ġebel

3.) Manifattur:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Sistema/i ta' AVCP:

Sistema 1

5.)

Dokument Ewropew ta' Valutazzjoni:	**EAD 330076-01-0604**
Valutazzjoni Teknika Ewropea:	**ETA-16/0089**
Korp tal-Valutazzjoni Teknika:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Korp/i nnotifikat/i:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Prestazzjoni/jiet ddikjarata/i:

a) Mehāniskā pretestība un stabilitāte (BPP 1) un drošība un pieejamība (BPP 4)

Karatteristiċi essenzjali	Prestazzjoni
Reżistenza karatteristika għat-tagħbija statika u kważi statika	Ara l-Annessi B 5, B 6, C 1 sa C 56
Reżistenza karatteristika u spostamenti għal sismiċi Tagħbija	L-ebda prestazzjoni ma ġiet ivvalutata

DIKJARAZZJONI TA' PRESTAZZJONI

Nru. **4 - 021 - 160089 - 2024/01**

b) Sigurtà fil-każ ta 'nar (BWR 2)

Karatteristiċi essenzjali	Prestazzjoni
Reazzjoni għan-nar	Klassi A1
Ir-reżistenza għan-nar taħt tensjoni u t-tagħbija tal-shear bi u mingħajr driegħ tal-lieva. Distanzi minimi tat-tarf u spazjar	Ara l-Annessi C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44,

c) Iġjene, saħħa u ambjent (BWR 3)

Karatteristiċi essenzjali	Prestazzjoni
Kontenut, emissjoni u/jew rilaxx ta' sustanzi perikoluż	L-ebda prestazzjoni ma ġiet ivvalutata

d) Protezzjoni kontra l-istorbju (BWR 5)

Karatteristiċi essenzjali	Prestazzjoni

e) Ekonomija tal-enerġija u żamma tas-sħana (BWR 6)

Karatteristiċi essenzjali	Prestazzjoni

f) Użu sostenibbli tar-riżorsi naturali (BWR 7)

Karatteristiċi essenzjali	Prestazzjoni

Il-prestazzjoni tal-prodott identifikat hawn fuq hija konformi mal-prestazzjonijiet iddikjarati. Din id-dikjarazzjoni ta' prestazzjoni hija maħruġa, skont ir-Regolament (UE) Nru 305/2011, taħt ir-responsabbiltà unika tal-manifattur identifikat hawn fuq.

Iffirmat għal u f'isem il-manifattur minn:

Dr. Jens Weber
(isem)

Bad Laasphe, 28.01.2025
(post u data tal-ħruġ)

(firma)

PRESTATIEVERKLARING

Nr. **4 - 021 - 160089 - 2024/01**

1.) Unieke identificatiecode van het producttype:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Beoogd(e) gebruik(en):

Metalen injectieankers voor gebruik in metselwerk

3.) Fabrikant:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Het systeem of de systemen voor de beoordeling en verificatie van de prestatiebestendigheid:

Systeem 1

5.)

Europees beoordelingsdocument:	**EAD 330076-01-0604**
Europese technische beoordeling:	**ETA-16/0089**
Technische beoordelingsinstantie:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Aangemelde instantie(s):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Aangegeven prestatie(s):

a) Mehāniskā izturība un stabilitāte (BWR 1) un drošība un pieejamība (BWR 4)

Essentiële kenmerken	Prestaties
Karakteristieke weerstand voor statische en quasi-statische belasting	Zie bijlagen B 5, B 6, C 1 tot en met C 56.
Karakteristieke weerstand en verplaatsingen voor seismische belasting	Geen prestatie beoordeeld

PRESTATIEVERKLARING

Nr. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Veiligheid in geval van brand (BWR 2)

Essentiële kenmerken	Prestaties
Reactie op vuur	Klasse A1
Weerstand tegen brand onder trek- en schuifbelasting met en zonder hefboomarm. Minimumafstanden en afstanden tussen randen	Zie bijlagen C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 en C52.

c) Hygiëne, gezondheid en het milieu (BWR 3)

Essentiële kenmerken	Prestaties
Inhoud, emissie en/of vrijkomen van gevaarlijke stoffen	Geen prestatie beoordeeld

d) Bescherming tegen lawaai (BWR 5)

Essentiële kenmerken	Prestaties

e) Energiebesparing en warmtebehoud (BWR 6)

Essentiële kenmerken	Prestaties

f) Duurzaam gebruik van natuurlijke hulpbronnen (BWR 7)

Essentiële kenmerken	Prestaties

De prestaties van het hierboven omschreven product zijn conform de aangegeven prestaties. Deze prestatieverklaring wordt in overeenstemming met Verordening (EU) nr. 305/2011 onder de exclusieve verantwoordelijkheid van de hierboven vermelde fabrikant verstrekt.

Ondertekend voor en namens de fabrikant door:

Dr. Jens Weber
(naam)

Bad Laasphe, 28.01.2025
(plaats en datum van afgifte)

(handtekening)

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr **4 - 021 - 160089 - 2024/01**

1.) Niepowtarzalny kod identyfikacyjny typu wyrobu:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Zamierzone zastosowanie lub zastosowania:

Metalowe kotwy iniekcyjne do stosowania w murze

3.) Producent:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) System(-y) oceny i weryfikacji stałości właściwości użytkowych:

system 1

5.)

Europejski Dokument Oceny:	**EAD 330076-01-0604**
Europejska Ocena Techniczna:	**ETA-16/0089**
Jednostka ds. Oceny Technicznej:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Jednostka lub Jednostki Notyfikowane:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklarowane właściwości użytkowe:

a) Nośność i stateczność (BWR 1) oraz bezpieczeństwo użytkowania (BWR 4)

Zasadnicze charakterystyki	Właściwości użytkowe
Charakterystyczna odporność na obciążenia statyczne i quasi-statyczne	Patrz załączniki B 5, B 6, C 1 do C 56
Charakterystyczny opór i przemieszczenia dla obciążenia sejsmicznego loading	Nie oceniono wydajności

DEKLARACJA WŁAŚCIWOŚCI UŻYTKOWYCH

Nr **4 - 021 - 160089 - 2024/01**

EJOT®

b) Bezpieczeństwo pożarowe (BWR 2)

Zasadnicze charakterystyki	Właściwości użytkowe
Reakcja na ogień	Klasa A1
Odporność na ogień pod obciążeniem rozciągającym i ścinającym z i bez ramienia dźwigni. Minimalne odległości i odstępy między krawędziami	Zob. załączniki C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 i C52.

c) Higiena, zdrowie i środowisko (BWR 3)

Zasadnicze charakterystyki	Właściwości użytkowe
Zawartość, emisja i/lub uwalnianie substancji niebezpiecznych	Nie oceniono wydajności

d) Ochrona przed hałasem (BWR 5)

Zasadnicze charakterystyki	Właściwości użytkowe

e) Oszczędność energii i zatrzymywanie ciepła (BWR 6)

Zasadnicze charakterystyki	Właściwości użytkowe

f) Zrównoważone wykorzystanie zasobów naturalnych (BWR 7)

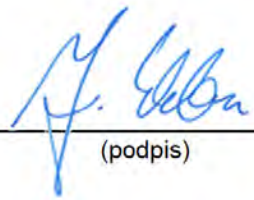
Zasadnicze charakterystyki	Właściwości użytkowe

Właściwości użytkowe określonego powyżej wyrobu są zgodne z zestawem deklarowanych właściwości użytkowych. Niniejsza deklaracja właściwości użytkowych wydana zostaje zgodnie z Rozporządzeniem (UE) nr 305/2011 na wyłączną odpowiedzialność producenta określonego powyżej.

W imieniu producenta podpisał(-a):

dr Jens Weber
(nazwisko)

Bad Laasphe, 28.01.2025
(miejsce i data wydania)



(podpis)

DECLARAÇÃO DE DESEMPENHO

N.o **4 - 021 - 160089 - 2024/01**

1.) Código de identificação único do produto-tipo:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Utilização(ões) prevista(s)

Âncoras de injeção de metal para utilização em alvenaria

3.) Fabricante:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Sistema(s) de avaliação e verificação da regularidade do desempenho (AVCP):

Sistema 1

5.)

Documento de Avaliação Europeu:	**EAD 330076-01-0604**
Avaliação Técnica Europeia	**ETA-16/0089**
Organismo de Avaliação Técnica:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Organismo(s) notificado (s):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Desempenho(s) declarado(s):

a) Resistência mecânica e estabilidade (BWR 1) e segurança e acessibilidade (BWR 4)

Características essenciais	Desempenho
Resistência caraterística para cargas estáticas e quase-estáticas	Ver anexos B 5, B 6, C 1 a C 56
Resistência e deslocamentos caraterísticos para cargas sísmicas sísmico	Nenhum desempenho avaliado

DECLARAÇÃO DE DESEMPENHO

N.o **4 - 021 - 160089 - 2024/01**

EJOT®

b) Segurança em caso de incêndio (BWR 2)

Características essenciais	Desempenho
Reacção ao fogo	Classe A1
Resistência ao fogo sob tensão e carga de cisalhamento com e sem braço de alavanca. Distâncias e espaçamentos mínimos entre bordos	Ver anexos C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 e C52

c) Higiene, saúde e meio ambiente (BWR 3)

Características essenciais	Desempenho
Conteúdo, emissão e/ou libertação de substâncias perigosas	Nenhum desempenho avaliado

d) Protecção contra o ruído (BWR 5)

Características essenciais	Desempenho

e) Economia de energia e retenção de calor (BWR 6)

Características essenciais	Desempenho

f) Utilização sustentável dos recursos naturais (BWR 7)

Características essenciais	Desempenho

O desempenho do produto identificado acima está em conformidade com o conjunto de desempenhos declarados. A presente declaração de desempenho é emitida, em conformidade com o Regulamento (UE) n.o 305/2011, sob a exclusiva responsabilidade do fabricante identificado acima.

Assinado por e em nome do fabricante por:

Dr. Jens Weber
(nome)

Bad Laasphe, 28.01.2025
(local e data de emissão)

(assinatura)

DECLARAȚIA DE PERFORMANȚĂ

Nr, **4 - 021 - 160089 - 2024/01**

1.) Cod unic de identificare al produsului-tip:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Utilizare (utilizări) preconizată (preconizate):

Ancore de injecție metalice pentru utilizare în zidărie

3.) Fabricant:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Sistemul (sistemele) de evaluare și de verificare a constanței performanței:

Sistemul 1

5.)

Documentul de evaluare european:	**EAD 330076-01-0604**
Evaluarea tehnică europeană:	**ETA-16/0089**
Organismul de evaluare tehnică:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Organism (organisme) notificat(e):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Performanța (performanțe) declarată (declarate):

a) Rezistența mecanică și stabilitatea (BWR 1) și siguranța și accesibilitatea (BWR 4)

Caracteristici esenţiale	Performanţa produsului
Rezistența caracteristică pentru sarcini statice și cvasi-statice	A se vedea anexele B 5, B 6, C 1 până la C 56
Rezistența și deplasările caracteristice pentru încărcarea seismică de încărcare	Nicio performanță evaluată

DECLARAȚIA DE PERFORMANȚĂ

Nr, **4 - 021 - 160089 - 2024/01**

EJOT®

b) Siguranța în caz de incendiu (BWR 2)

Caracteristici esenţiale	Performanţa produsului
Reacția la foc	Clasa A1
Rezistența la foc sub sarcină de tracțiune și forfecare cu și fără braț de pârghie. Distanțe minime între muchii și spații	A se vedea anexele C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 și C52

c) Igiena, sănătatea și mediul (BWR 3)

Caracteristici esenţiale	Performanţa produsului
Conținutul, emisia și/sau eliberarea de substanțe periculoase	Nicio performanță evaluată

d) Protecție împotriva zgomotului (BWR 5)

Caracteristici esenţiale	Performanţa produsului

e) Economie de energie și păstrarea căldurii (BWR 6)

Caracteristici esenţiale	Performanţa produsului

f) Utilizarea durabilă a resurselor naturale (BWR 7)

Caracteristici esenţiale	Performanţa produsului

Performanța produsului identificat mai sus este în conformitate cu setul de performanțe declarate. Această declarație de performanță este eliberată în conformitate cu Regulamentul (UE) nr. 305/2011, pe răspunderea exclusivă a fabricantului identificat mai sus.

Semnată pentru și în numele fabricantului de către:

Dr. Jens Weber
(numele)

Bad Laasphe, 28.01.2025
(locul şi data emiterii)

(semnătură)

PRESTANDADEKLARATION

Nr **4 - 021 - 160089 - 2024/01**

1.) Produkttypens unika identifikationskod:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Avsedd användning/avsedda användningar:

Injektionsankare av metall för användning i murverk

3.) Tillverkare:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) System för bedömning och fortlöpande kontroll av prestanda:

Systen 1

5.)

Europeiskt bedömningsdokument:	**EAD 330076-01-0604**
Europeisk teknisk bedömning:	**ETA-16/0089**
Tekniskt bedömningsorgan:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Anmält/anmälda organ:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Angiven prestanda:

a) Mekanisk motstånd och stabilitet (BWR 1) och säkerhet och tillgänglighet (BWR 4)

Väsentliga egenskaper	Prestanda
Karakteristiskt motstånd för statiska och kvasistatiska belastningar	Se bilagorna B 5, B 6, C 1 till C 56.
Karakteristiska motstånd och förskjutningar för seismisk belastning	Ingen prestationsbedömning

PRESTANDADEKLARATION

Nr **4 - 021 - 160089 - 2024/01**

EJOT®

b) Säkerhet vid brand (BWR 2)

Väsentliga egenskaper	Prestanda
Reaktion på brand	Klass A1
Motstånd mot brand under drag- och skjuvbelastning med och utan hävstångsarm. Minsta kantavstånd och inbördes avstånd	Se bilagorna C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 och C52.

c) Hygien, hälsa och miljö (BWR 3)

Väsentliga egenskaper	Prestanda
Innehåll, utsläpp och/eller avgivning av farliga ämnen	Ingen prestationsbedömning

d) Skydd mot buller (BWR 5)

Väsentliga egenskaper	Prestanda

e) Energihushållning och värmehållning (BWR 6)

Väsentliga egenskaper	Prestanda

f) Hållbar användning av naturresurser (BWR 7)

Väsentliga egenskaper	Prestanda

Prestandan för ovanstående produkt överensstämmer med den angivna prestandan. Denna prestandadeklaration har utfärdats i enlighet med förordning (EU) nr 305/2011 på eget ansvar av den tillverkare som anges ovan.

Undertecknad på tillverkarens vägnar av:

Dr. Jens Weber
(namn)

Bad Laasphe, 28.01.2025
(Iplats and datum)


(signatur)

VYHLÁSENIE O PARAMETROCH

č. **4 - 021 - 160089 - 2024/01**

1.) Jedinečný identifikačný kód typu výrobku:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Zamýšľané použitie/použitia:

Kovové injektážne kotvy na použitie v murive

3.) Výrobca:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Systém(-y) posudzovania a overovania nemennosti parametrov:

Systém 1

5.)

Európsky hodnotiaci dokument:	**EAD 330076-01-0604**
Európske technické posúdenie:	**ETA-16/0089**
Orgán technického posudzovania:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Notifikovaný(-é) subjekt(-y):	**2873 - IFSW - Technische Universität Darmstadt**

6.) Deklarované parametre:

a) Mechanická odolnosť a stabilita (BWR 1) a bezpečnosť a dostupnosť (BWR 4)

základné charakteristiky	vlastnosti výrobku
Charakteristická odolnosť pri statickom a kvázi statickom zaťažení	Pozri prílohy B 5, B 6, C 1 až C 56
Charakteristická odolnosť a posuny pre seizmické zaťaženie	Nehodnotí sa žiadna výkonnosť

VYHLÁSENIE O PARAMETROCH

č. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Bezpečnosť v prípade požiaru (BWR 2)	
základné charakteristiky	vlastnosti výrobku
Reakcia na požiar	Trieda A1
Požiarna odolnosť pri zaťažení ťahom a šmykom s a bez pákového ramena. Minimálne vzdialenosti a rozstupy hrán	Pozri prílohy C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 a C52.

c) Hygiena, zdravie a životné prostredie (BWR 3)	
základné charakteristiky	vlastnosti výrobku
Obsah, emisie a/alebo uvoľňovanie nebezpečných látok	Nehodnotí sa žiadna výkonnosť

d) Ochrana proti hluku (BWR 5)	
základné charakteristiky	vlastnosti výrobku

e) Úspora energie a zadržiavanie tepla (BWR 6)	
základné charakteristiky	vlastnosti výrobku

f) Udržateľné využívanie prírodných zdrojov (BWR 7)	
základné charakteristiky	vlastnosti výrobku

Uvedené parametre výrobku sú v zhode so súborom deklarovaných parametrov. Toto vyhlásenie o parametroch sa v súlade s nariadením (EÚ) č. 305/2011 vydáva na výhradnú zodpovednosť uvedeného výrobcu.

Podpísal(-a) za a v mene výrobcu:

Dr. Jens Weber
(meno)

Bad Laasphe, 28.01.2025
(miesto a dátum na výstava)

(podpis)

IZJAVA O LASTNOSTIH

Št. **4 - 021 - 160089 - 2024/01**

1.) Enotna identifikacijska oznaka tipa proizvoda:

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry (033)

2.) Predvidena uporaba:

Kovinska injekcijska sidra za uporabo v zidovih

3.) Proizvajalec:

EJOT SE & Co. KG, Market Unit Construction, In der Stockwiese 35, 57334 Bad Laasphe - Germany

4.) Sistemi ocenjevanja in preverjanja nespremenljivosti lastnosti:

Sistem 1

5.)

Evropski ocenjevalni dokument:	**EAD 330076-01-0604**
Evropska tehnična ocena:	**ETA-16/0089**
Organ za tehnično ocenjevanje:	**DIBt - Deutsches Institut für Bautechnik, Berlin**
Priglašeni organi:	**2873 - IFSW - Technische Universität Darmstadt**

6.) Navedene lastnosti:

a) Mehanska odpornost in stabilnost (BWR 1) ter varnost in dostopnost (BWR 4)

Glavne značilnosti	Zmogljivost proizvoda
Karakteristična odpornost pri statičnih in kvazistatičnih obremenitvah	Glej priloge B 5, B 6, C 1 do C 56
Značilna odpornost in premiki za seizmične obremenitev	Uspešnost ni bila ocenjena

IZJAVA O LASTNOSTIH

Št. **4 - 021 - 160089 - 2024/01**

EJOT®

b) Varnost v primeru požara (BWR 2)

Glavne značilnosti	Zmogljivost proizvoda
Odziv na ogenj	Razred A1
Odpornost proti požaru pri natezni in strižni obremenitvi z in brez ročice. Najmanjše razdalje in razmiki med robovi	Glej priloge C2, C7, C8, C13, C14, C17, C18, C19, C20, C37, C38, C43, C44, C45, C46, C51 in C52.

c) Higiena, zdravje in okolje (BWR 3) \ t

Glavne značilnosti	Zmogljivost proizvoda
Vsebnost, emisije in/ali sproščanje nevarnih snovi	Uspešnost ni bila ocenjena

d) Zaščita pred hrupom (BWR 5) \ t

Glavne značilnosti	Zmogljivost proizvoda

e) Varčevanje z energijo in ohranjanje toplote (BWR 6) \ t

Glavne značilnosti	Zmogljivost proizvoda

f) Trajnostna raba naravnih virov (BWR 7) \ t

Glavne značilnosti	Zmogljivost proizvoda

Lastnosti proizvoda, navedenega zgoraj, so v skladu z navedenimi lastnostmi. Za izdajo te izjave o lastnostih je v skladu z Uredbo (EU) št. 305/2011 odgovoren izključno proizvajalec, naveden zgoraj.

Podpisal za in v imenu proizvajalca:

Dr. Jens Weber
(Ime)

Bad Laasphe, 28.01.2025
(Kraj in datum izstavitve)

(Podpis)

Table B2: Installation parameters in autoaerted AAC and solid masonry (without sleeve) for prepositioned or push through installation

Anchor size				**M8**	**M10**	**IG-M6**	**M12**	**IG-M8**	**M16**	**IG-M10**
Nominal drill hole diameter		d_0	[mm]	10	12		14		18	
Drill hole depth		h_0	[mm]	$h_{ef} + t_{fix}$ [1)]						
Effective anchorage depth		h_{ef}	[mm]	80	≥ 90		≥ 100		≥ 100	
Diameter of clearance hole in the fixture	Prepositioned installation	$d_f \leq$	[mm]	9	12	7	14	9	18	12
	Push through installation	$d_f \leq$	[mm]	12	14	14	16	16	20	20
Maximum installation torque		T_{inst}	[Nm]	See Annexes C 4 – C 56						
Minimum thickness of member		h_{min}	[mm]	h_{ef} + 30						
Minimum spacing		s_{min}	[mm]	See Annexes C 4 – C 56						
Minimum edge distance		c_{min}	[mm]							

1) Consider t_{fix} in case of push through installation.

Table B3: Installation parameters in solid and hollow brick (with perforated sleeve) for prepositioned installation

Anchor size			**M8**	**M8 / M10 / IG-M6**			**M12 / M16 / IG-M8 / IG-M10**		
Perforated sleeve SH			**12x80**	**16x85**	**16x130**	**16x130/330**	**20x85**	**20x130**	**20x200**
Nominal drill hole diameter	d_0	[mm]	12	16	16	16	20	20	20
Drill hole depth	h_0	[mm]	85	90	135	330	90	135	205
Effective anchorage depth	h_{ef}	[mm]	80	85	130	130	85	130	200
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	9	7 (IG-M6) / 9 (M8) / 12 (M10)			9 (IG-M8) / 12 (IG-M10) / 14 (M12) / 18 (M16)		
Maximum installation torque	T_{inst}	[Nm]	See Annexes C 4 – C 56						
Minimum thickness of member	h_{min}	[mm]	115	115	195	195	115	195	240
Minimum spacing	s_{min}	[mm]	See Annexes C 4 – C 56						
Minimum edge distance	c_{min}	[mm]							

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex B 5**
Intended use Installation parameters	

Table B4: Installation parameters in solid and hollow bricks (with perforated sleeve) for prepositioned installation through non-load-bearing layers and/or push-through installation

Anchor size				**M8 / M10 / IG-M6**		**M12 / M16 / IG-M8 / IG-M10**	
		Perforated sleeve SH		**16x130**	**16x130/330**	**20x130**	**20x200**
Nominal drill hole diameter		d_0	[mm]	16	16	20	20
Drill hole depth		h_0	[mm]	h_{ef} + 5mm + t_{nll} + t_{fix} [1)]			
Effective embedment depth	Prepositioned installation	h_{ef}	[mm]	130	130	130	200
	Push through installation	h_{ef}	[mm]	85	130	85	85
Maximum thickness of non-loadbearing layer		max t_{nll}	[mm]	45	200	45	115
Diameter of clearance hole in the fixture	Prepositioned installation	$d_f \leq$	[mm]	7 (IG-M6) / 9 (M8) / 12 (M10)		9 (IG-M8) / 12 (IG-M10) / 14 (M12) / 18 (M16)	
	Push through installation	$d_f \leq$	[mm]	18		22	
Maximum installation torque		T_{inst}	[Nm]	See Annexes C 4 – C 56			
Minimum thickness of member		h_{min}	[mm]	195 (115)	195	195 (115)	240 (115)
Minimum spacing		s_{min}	[mm]	See Annexes C 4 – C 56			
Minimum edge distance		c_{min}	[mm]				

[1)] Consider t_{nll} and/or t_{fix} in case of non-loadbearing layers and/or push through installation.

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex B 6**
Intended use Installation parameters	

Table C1: β-factor for job-site testing under tension loading

Base material	anchor size	Perforated sleeve SH	Anchorage depth	β-Factor					
				T_a: 40°C / 24°C		T_b: 80°C / 50°C		T_c: 120°C / 72°C	
			h_{ef}	d/d	w/d w/w	d/d	w/d w/w	d/d	w/d w/w
Autoclaved aerated concrete	all sizes	with and without SH	all	0,95	0,86	0,81	0,73	0,81	0,73
Calcium silica bricks	$d_0 \leq 14$ mm	with SH	all	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm			0,93	0,93	0,87	0,87	0,65	0,65
	$d_0 \leq 14$ mm	without SH	≤ 100 mm	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm			0,93	0,93	0,87	0,87	0,65	0,65
	all sizes	without SH	> 100 mm	0,93	0,56	0,87	0,52	0,65	0,40
Clay Bricks	all sizes	with SH	all	0,86	0,86	0,86	0,86	0,73	0,73
		without SH	≤ 100 mm	0,93	0,80	0,87	0,74	0,65	0,56
		without SH	> 100 mm	0,86	0,43	0,86	0,43	0,73	0,37
Concrete bricks	$d_0 \leq 12$ mm	with and without SH	all	0,93	0,80	0,87	0,74	0,65	0,56
	$d_0 \geq 16$ mm			0,93	0,93	0,87	0,87	0,65	0,65

Table C2: Characteristic steel resistance

Anchor size				M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Cross section area		A_s	[mm²]	36,6	58	84,3	157	-	-	-
Characteristic tension resistance, Steel failure [1]										
Steel, Property class	4.6 and 4.8	$N_{Rk,s}$	[kN]	15 (13)	23 (21)	34	63	-[3]	-[3]	-[3]
	5.6 and 5.8	$N_{Rk,s}$	[kN]	18 (17)	29 (27)	42	78	10	17	29
	8.8	$N_{Rk,s}$	[kN]	29 (27)	46 (43)	67	125	16	27	46
Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70)	50	$N_{Rk,s}$	[kN]	18	29	42	79	-[3]	-[3]	-[3]
	70	$N_{Rk,s}$	[kN]	26	41	59	110	14	26	41
	80	$N_{Rk,s}$	[kN]	29	46	67	126	-[3]	-[3]	-[3]
Characteristic tension resistance, Partial factor [2]										
Steel, Property class	4.6 and 5.6	$\gamma_{Ms,N}$	[-]	2,0				-[3]		
	4.8, 5.8 and 8.8	$\gamma_{Ms,N}$	[-]	1,5						
Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70)	50	$\gamma_{Ms,N}$	[-]	2,86				-[3]		
	70	$\gamma_{Ms,N}$	[-]	1,87						
	80	$\gamma_{Ms,N}$	[-]	1,6				-[3]		
Characteristic shear resistance, Steel failure without lever arm [1]										
Steel, Property class	4.6 and 4.8	$V^0_{Rk,s}$	[kN]	7 (6)	12 (10)	17	31	-[3]	-[3]	-[3]
	5.6 and 5.8	$V^0_{Rk,s}$	[kN]	9 (8)	15 (13)	21	39	5	9	15
	8.8	$V^0_{Rk,s}$	[kN]	15 (13)	23 (21)	34	63	8	14	23
Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70)	50	$V^0_{Rk,s}$	[kN]	9	15	21	39	-[3]	-[3]	-[3]
	70	$V^0_{Rk,s}$	[kN]	13	20	30	55	7	13	20
	80	$V^0_{Rk,s}$	[kN]	15	23	34	63	-[3]	-[3]	-[3]

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances

β-factors for job site testing under tension load

Characteristic steel resistance under tension and shear load

Annex C 1

Table C2: Characteristic steel resistance (continuation)

Anchor size				M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Cross section area		A_s	[mm²]	36,6	58	84,3	157	-	-	-
Characteristic shear resistance, Steel failure with lever arm [1]										
Steel, Property class	4.6 and 4.8	$M^0_{Rk,s}$	[Nm]	15 (13)	30 (27)	52	133	-[3]	-[3]	-[3]
	5.6 and 5.8	$M^0_{Rk,s}$	[Nm]	19 (16)	37 (33)	65	166	8	19	37
	8.8	$M^0_{Rk,s}$	[Nm]	30 (26)	60 (53)	105	266	12	30	60
Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70)	50	$M^0_{Rk,s}$	[Nm]	19	37	66	167	-[3]	-[3]	-[3]
	70	$M^0_{Rk,s}$	[Nm]	26	52	92	232	11	26	52
	80	$M^0_{Rk,s}$	[Nm]	30	59	105	266	-[3]	-[3]	-[3]
Characteristic shear resistance, Partial factor [2]										
Steel, Property class	4.6 and 5.6	$\gamma_{Ms,V}$	[-]	1,67				-[3]		
	4.8, 5.8 and 8.8	$\gamma_{Ms,V}$	[-]	1,25						
Stainless steel A2, A4 and HCR, class (A2 only class 50 and 70)	50	$\gamma_{Ms,V}$	[-]	2,38				-[3]		
	70	$\gamma_{Ms,V}$	[-]	1,56						
	80	$\gamma_{Ms,V}$	[-]	1,33				-[3]		

1) Values are only valid for the given stress area A_s. Values in brackets are valid for undersized threaded rods with smaller stress area A_s for hot-dip galvanised threaded rods according to EN ISO 10684:2004+AC:2009.
2) in absence of national regulation
3) Fastener type not part of the ETA

Table C3: Characteristic steel resistance under fire exposure [1]

Anchor size				M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Characteristic tension resistance, Steel failure										
Steel, Property class 5.8, and higher; Stainless steel A2, A4 and HCR, class 50 and higher	R30	$N_{Rk,s,fi}$	[kN]	1,1	1,7	3,0	5,7	0,3	1,1	1,7
	R60	$N_{Rk,s,fi}$	[kN]	0,9	1,4	2,3	4,2	0,2	0,9	1,4
	R90	$N_{Rk,s,fi}$	[kN]	0,7	1,0	1,6	3,0	0,2	0,7	1,0
	R120	$N_{Rk,s,fi}$	[kN]	0,5	0,8	1,2	2,2	0,1	0,5	0,8
Characteristic shear resistance, Steel failure without lever arm										
Steel, Property class 5.8, and higher; Stainless steel A2, A4 and HCR, class 50 and higher	R30	$V_{Rk,s,fi}$	[kN]	1,1	1,7	3,0	5,7	0,3	1,1	1,7
	R60	$V_{Rk,s,fi}$	[kN]	0,9	1,4	2,3	4,2	0,2	0,9	1,4
	R90	$V_{Rk,s,fi}$	[kN]	0,7	1,0	1,6	3,0	0,2	0,7	1,0
	R120	$V_{Rk,s,fi}$	[kN]	0,5	0,8	1,2	2,2	0,1	0,5	0,8
Characteristic shear resistance, Steel failure with lever arm										
Steel, Property class 5.8, and higher; Stainless steel A2, A4 and HCR, class 50 and higher	R30	$M_{Rk,s,fi}$	[Nm]	1,1	2,2	4,7	12,0	0,2	1,1	2,2
	R60	$M_{Rk,s,fi}$	[Nm]	0,9	1,8	3,5	9,0	0,2	0,9	1,8
	R90	$M_{Rk,s,fi}$	[Nm]	0,7	1,3	2,5	6,3	0,1	0,7	1,3
	R120	$M_{Rk,s,fi}$	[Nm]	0,5	1,0	1,8	4,7	0,1	0,5	1,0

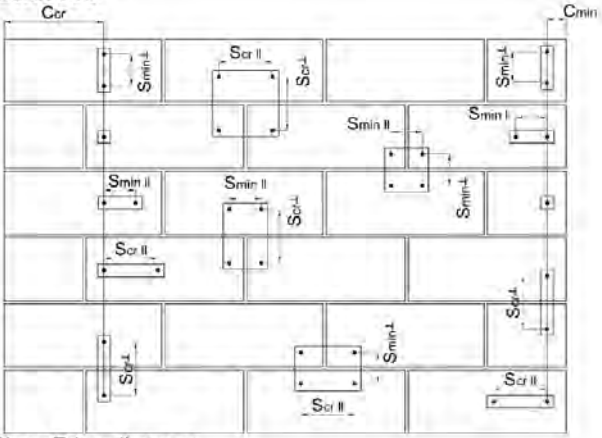
1) partial factor in case of fire is 1,0 for all steel types and load directions.

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

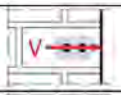
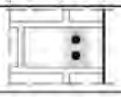
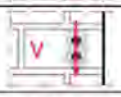
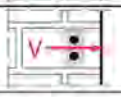
Performances
Characteristic steel resistance under tension and shear load – under fire exposure

Annex C 2

Spacing and edge distances



c_{cr} = Char. Edge distance
c_{min} = Minimum Edge distance
$s_{cr,ll}$; ($s_{min,ll}$) = Characteristic (minimum) spacing for anchors placed parallel to horizontal joint
$s_{cr,\perp}$; ($s_{min,\perp}$) = Characteristic (minimum) spacing for anchors placed perpendicular to horizontal joint

Anchor position \ Load direction	Tension load		Shear load parallel to free edge V_{ll}		Shear load perpendicular to free edge $V_{\perp}$	
Anchors parallel to horizontal joint $s_{cr,ll}$; ($s_{min,ll}$)		$\alpha_{g\,ll,N}$		$\alpha_{g\,ll,V\,ll}$		$\alpha_{g\,ll,V\perp}$
Anchors vertical to horizontal joint $s_{cr,\perp}$; ($s_{min,\perp}$)		$\alpha_{g\perp,N}$		$\alpha_{g\perp,V\,ll}$		$\alpha_{g\perp,V\perp}$

$\alpha_{edge,N}$ = Reduction factor for tension loads at the free edge for $c_{min} \le c < c_{cr}$ (single anchor)
$\alpha_{edge,V\perp}$ = Reduction factor for shear loads perpendicular to the free edge for $c_{min} \le c < c_{cr}$ (single anchor)
$\alpha_{edge,V\,ll}$ = Reduction factor for shear loads parallel to the free edge for $c_{min} \le c < c_{cr}$ (single anchor)
$\alpha_{g\,ll,N}$ = Group factor for anchors parallel to horizontal joint under tension load
$\alpha_{g\perp,N}$ = Group factor for anchors perpendicular to horizontal joint under tension load
$\alpha_{g\,ll,V\,ll}$ = Group factor for anchors parallel to horizontal joint under shear load parallel to the free edge
$\alpha_{g\perp,V\,ll}$ = Group factor for anchors perpendicular to horizontal joint under shear load parallel to the free edge
$\alpha_{g\,ll,V\perp}$ = Group factor for anchors parallel to horizontal joint under shear load perpendicular to the free edge
$\alpha_{g\perp,V\perp}$ = Group factor for anchors perpendicular to hor. joint under shear load perpendicular to the free edge

Single anchor at the edge:
$N_{Rk,b,c} = \alpha_{edge,N} * N_{RK,b}$ resp. $N_{Rk,p,c} = \alpha_{edge,N} * N_{RK,p}$
$V_{Rk,c\,ll} = \alpha_{edge,V\,ll} * V_{Rk,b}$
$V_{Rk,c\perp} = \alpha_{edge,V\perp} * V_{Rk,b}$

Group of 2 anchors:
$N^{g}_{Rk} = \alpha_{g,N} * N_{RK,b}$
$V^{g}_{Rk\,ll} = \alpha_{g,V\,ll} * V_{Rk,b}$ resp. $V^{g}_{Rk\perp} = \alpha_{g,V\perp} * V_{Rk,b}$ (for $c \ge c_{cr}$)
$V^{g}_{Rk,c\,ll} = \alpha_{g,V\,ll} * V_{Rk,b}$ resp. $V^{g}_{Rk,c\perp} = \alpha_{g,V\perp} * V_{Rk,b}$ (for $c \ge c_{min}$)

Group of 4 anchors:
$N^{g}_{Rk} = \alpha_{g\,ll,N} * \alpha_{g\perp,N} * N_{RK,b}$
$V^{g}_{Rk\,ll} = \alpha_{g\,ll,V\,ll} * \alpha_{g\perp,V\,ll} * V_{Rk,b}$ resp. $V^{g}_{Rk\perp} = \alpha_{g\,ll,V\perp} * \alpha_{g\perp,V\perp} * V_{Rk,b}$ (for $c \ge c_{cr}$)
$V^{g}_{Rk,c\,ll} = \alpha_{g\,ll,V\,ll} * \alpha_{g\perp,V\,ll} * V_{Rk,b}$ resp. $V^{g}_{Rk,c\perp} = \alpha_{g\,ll,V\perp} * \alpha_{g\perp,V\perp} * V_{Rk,b}$ (for $c \ge c_{min}$)

Equations depend on anchor position and load direction (see table above). Reduction factor, group factor and resistances see annex C 4 – C 56. Reduction for installation in joints see annex B 1.

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances
Definition of the reduction- and group factors

Annex C 3

Brick type: Autoclaved aerated concrete – AAC

Table C4: Stone description

Brick type		Autoclaved aerated concrete AAC
Density	ρ [kg/dm³]	0,35 – 0,6
Normalised mean compressive strenght	f_b [N/mm²]	≥ 2, ≥ 4 or ≥ 6
Code		EN 771-4:2011+A1:2015
Producer (Country)		e.g. Porit (DE)
Brick dimensions	[mm]	≥ 499 x 240 x 249
Drilling method		Rotary drilling

Table C5: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 10
Char. Edge distance	c_{cr}	[mm]	150 (for shear loads perpendicular to the free edge: c_{cr} = 210)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	300						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C6: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	0,85		50	0,12		50	0,70
				125	0,50		125	0,85
	150	1,00		210	1,00		150	1,00

Table C7: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	50	50	1,10		50	50	0,75
	150	50	1,25		150	50	0,90
	150	300	2,00		150	250	2,00

Table C8: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\parallel,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		50	50	0,20		50	50	0,25
		210	50	1,60		210	50	1,80
		210	300	2,00		210	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\parallel,V\parallel}$		with c ≥	with s ≥	$\alpha_{g\perp,V\parallel}$
		50	50	1,15		50	50	0,80
		150	50	1,60		150	50	1,10
		150	300	2,00		150	250	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances Autoclaved Aerated Concrete - AAC
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 4

Brick type: Autoclaved aerated concrete – AAC

Table C9: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
	d_s	h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [1]			$N_{Rk,b} = N_{Rk,p}$ [1]			$V_{Rk,b}$ [1]
	[mm]	[mm]	[kN]						
Normalised mean compressive strenght $f_b \geq 2$ N/mm²; Density $\rho \geq 0{,}35$ kg/dm³									
M8	-	80	1,2	0,9	0,9	0,9	0,9	0,9	1,5
M10 / IG-M6	-	90	1,2	0,9	0,9	0,9	0,9	0,9	2,5
M12 / M16 / IG-M8 / IG-M10	-	100	2,0	1,5	1,5	1,5	1,5	1,5	2,5
M8	SH 12	80	1,2	0,9	0,9	0,9	0,9	0,9	1,5
M8 / M10/ IG-M6	SH 16	≥ 85	1,2	0,9	0,9	0,9	0,9	0,9	2,5
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85	2,0	1,5	1,5	1,5	1,5	1,5	2,5

1) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
	d_s	h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [1]			$N_{Rk,b} = N_{Rk,p}$ [1]			$V_{Rk,b}$ [1]
	[mm]	[mm]	[kN]						
Normalised mean compressive strenght $f_b \geq 4$ N/mm²; Density $\rho \geq 0{,}50$ kg/dm³									
M8	-	80	3,0	2,5	2,0	2,5	2,0	2,0	4,5
M10 / IG-M6	-	90	3,0	2,5	2,0	2,5	2,0	2,0	7,5
M12 / M16 / IG-M8 / IG-M10	-	100	5,0	4,5	4,0	4,5	4,0	4,0	7,5
M8	SH 12	80	3,0	2,5	2,0	2,5	2,0	2,0	4,5
M8 / M10/ IG-M6	SH 16	≥ 85	3,0	2,5	2,0	2,5	2,0	2,0	7,5
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85	5,0	4,5	4,0	4,5	4,0	4,0	7,5

1) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex C 5**
Performances autoclaved aerated concrete - AAC Characteristic Resistances and Displacements	

Brick type: Autoclaved aerated concrete – AAC

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [1]			$N_{Rk,b} = N_{Rk,p}$ [1]			$V_{Rk,b}$ [1]
		[mm]	[kN]						
Normalised mean compressive strenght $f_b \geq 6$ N/mm²; Density $\rho \geq 0{,}60$ kg/dm³									
M8	-	80	4,0	3,5	3,0	3,5	3,0	3,0	6,0
M10 / IG-M6	-	90	4,0	3,5	3,0	3,5	3,0	3,0	10,0
M12 / M16 / IG-M8 / IG-M10	-	100	7,0	6,0	5,5	6,5	5,5	5,5	10,0
M8	SH 12	80	4,0	3,5	3,0	3,5	3,0	3,0	6,0
M8 / M10/ IG-M6	SH 16	≥ 85	4,0	3,5	3,0	3,5	3,0	3,0	10,0
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85	7,0	6,0	5,5	6,5	5,5	5,5	10,0

[1] $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C10: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,1	$0{,}1*N_{Rk} / 2{,}8$	$2*\delta_{N0}$	0,3	$0{,}3*V_{Rk} / 2{,}8$	$1{,}5*\delta_{V0}$
M16	all				0,1	$0{,}1*V_{Rk} / 2{,}8$	$1{,}5*\delta_{V0}$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex C 6**
Performances autoclaved aerated concrete – AAC Characteristic Resistances and Displacements	

Brick type: Solid calcium silica brick KS-NF

Table C11: Stone description

Brick type		Solid calcium silica brick KS-NF
Density	ρ [kg/dm³]	≥ 2,0
Normalised mean compressive strenght	f_b [N/mm²]	≥ 28
Conversion factor for lower compressive strengths		$(f_b / 28)^{0,5} \leq 1,0$
Code		EN 771-2:2011+A1:2015
Producer (Country)		e.g. Wemding (DE)
Brick dimensions	[mm]	≥ 240 x 115 x 71
Drilling method		Hammer drilling

Table C12: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 10	≤ 10	≤ 15	≤ 15	≤ 10	≤ 10	≤ 10
Char. Edge distance (under fire conditions)	c_{cr}; ($c_{cr,fi}$)	[mm]	150 (2 h_{ef}) (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing (under fire conditions)	$s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$)	[mm]	240 (4 h_{ef})						
	$s_{cr,\perp}$; ($s_{cr,fi,\perp}$)	[mm]	150 (4 h_{ef})						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	75						

Table C13: Reduction factors for single anchors at the edge

Tension load			Shear load perpendicular to free edge			Shear load parallel to free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	60[1]	0,50		60	0,30		60	0,60
	100[1]	0,50		100	0,50		100	1,00
	150[1]	1,00		240	1,00		150	1,00
	180	1,00						

1) All applications, except for hef = 200mm and without sleeve

Table C14: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	60[1]	75	0,70		60[1]	75	1,15
	150[1]	75	1,40		150[1]	75	2,00
	150[1]	240	2,00		150[1]	150	2,00
	180[2]	75	1,00		180[2]	75	1,15
	180[2]	240	1,70		180[2]	150	2,00
	240[2]	240	2,00				

1) All applications, except for hef = 200mm and without sleeve
2) Only for application with h_{ef} = 200mm and without sleeve

Table C15: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\parallel,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		60	75	0,75		60	75	0,90
		150	75	2,00		150	75	2,00
		150	240	2,00		150	150	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\parallel,V\parallel}$		with c ≥	with s ≥	$\alpha_{g\perp,V\parallel}$
		60	75	2,00		60	75	2,00
		150	75	2,00		150	75	2,00
		150	240	2,00		150	150	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances solid calcium silica brick KS-NF
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 7

Brick type: Solid calcium silica brick KS-NF

Table C16: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/w (w/d)
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ 2)			$N_{Rk,b} = N_{Rk,p}$ 2)			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 28$ N/mm² 1)									
M8	-	80	7,0	6,5	5,0	6,0	5,5	4,0	7,0
M10 / IG-M6	-	≥ 90							
M12 / IG-M8	-	≥ 100							
M16 / IG-M10	-	≥ 100	7,0	6,5	5,0	7,0	6,5	5,0	
M10 / M12 / M16 / IG-M6 / IG-M8 / IG-M10	-	200	9,0	8,5	6,5	5,5	5,0	4,0	
M8	SH 12	80	7,0	6,5	5,0	6,0	5,5	4,0	
M8 / M10/ IG-M6	SH 16	≥ 85	7,0	6,5	5,0	7,0	6,5	5,0	
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C11. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C17: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,1	$0{,}1*N_{Rk} / 3{,}5$	$2*\delta_{N0}$	0,3	$0{,}3*V_{Rk} / 3{,}5$	$1{,}5*\delta_{V0}$
M16	all				0,1	$0{,}1*V_{Rk} / 3{,}5$	$1{,}5*\delta_{V0}$

Table C18: Characteristic values of tension and shear load resistances under fire exposure

Anchor size	Perforated sleeve	Effective anchorage depth	Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$			
		h_{ef}	R30	R60	R90	R120
		[mm]	[kN]			
M8	-	80	0,48	0,41	0,34	0,30
M10 / IG-M6	-	≥ 90				
M12 / IG-M8	-	≥ 100				
M16 / IG-M10	-	≥ 100				
M8	SH 12	80	0,47	0,26	- 1)	- 1)
M8 / M10 /IG-M6	SH 16	≥ 85				
M12 / M16 / IG-M8 /IG-M10	SH 20	≥ 85				

1) no performance assessed

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex C 8**
Performances solid calcium silica brick KS-NF Characteristic Resistances and Displacements	

Brick type: Hollow Calcium silica brick KSL-3DF

Table C19: Stone description

Brick type		Hollow calcium silica brick KSL-3DF
Density	ρ [kg/dm³]	≥ 1,4
Normalised mean compressive strenght	f_b [N/mm²]	≥ 14
Conversion factor for lower compressive strengths		$(f_b / 14)^{0,75} \leq 1,0$
Code		EN 771-2:2011+A1:2015
Producer (Country)		e.g. KS-Wemding (DE)
Brick dimensions	[mm]	≥ 240 x 175 x 113
Drilling method		Rotary drilling

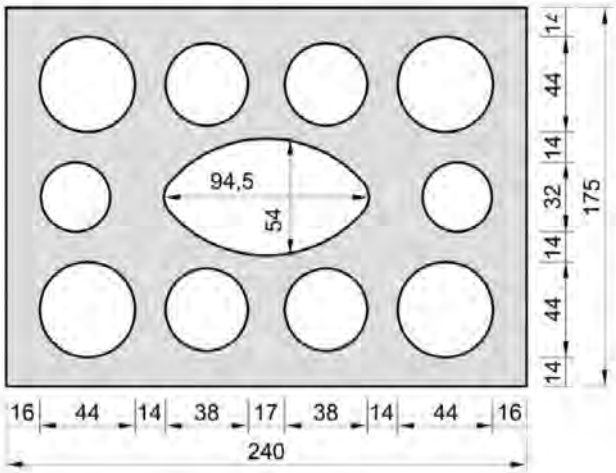


Table C20: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 8	≤ 8	≤ 5	≤ 8	≤ 8
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	240						
	$s_{cr,\perp}$	[mm]	120						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	120						

Table C21: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	60	1,00		60	0,30		60	1,00
	120	1,00		240	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow calcium silica brick KSL-3DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 9

Brick type: Hollow Calcium silica brick KSL-3DF

Table C22: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	60	120	1,50		60	120	1,00
	120	120	2,00				
	120	240	2,00		120	120	2,00

Table C23: Factors for anchor groups under shear load

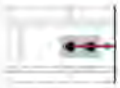
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		60	120	0,30		60	120	0,30
		120	120	1,00				
		120	240	2,00		240	120	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		60	120	1,00		60	120	1,00
		120	120	1,60				
		120	240	2,00		120	120	2,00

Table C24: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 14$ N/mm² [1]									
M8 / M10/ IG-M6	SH 16	≥ 85	2,5	2,5	1,5	2,5	2,5	1,5	6,0
		130	2,5	2,5	2,0	2,5	2,5	2,0	6,0
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85	6,5	6,0	4,5	6,5	6,0	4,5	6,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C19. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C25: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow calcium silica brick KSL-3DF
Group factors, characteristic Resistances and Displacements

Annex C 10

Brick type: Hollow Calcium silica brick KSL-8DF

Table C26: Stone description

Brick type		Hollow Calcium silica brick KSL-8DF
Density	ρ [kg/dm³]	≥ 1,4
Normalised mean compressive strenght	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,75} \leq 1,0$
Code		EN 771-2:2011+A1:2015
Producer (Country)		e.g. KS-Wemding (DE)
Brick dimensions	[mm]	≥ 248 x 240 x 238
Drilling method		Rotary drilling

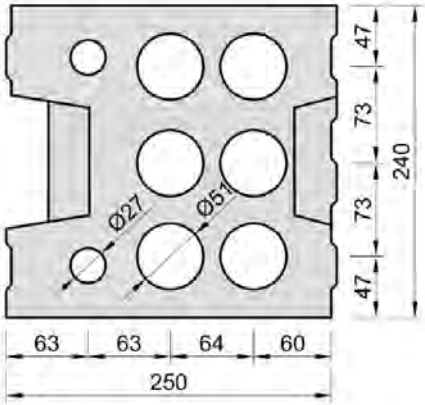


Table C27: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 8	≤ 8	≤ 5	≤ 8	≤ 8
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	120						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C28: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,30		50	1,00
	120	1,00		250	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow calcium silica brick KSL-8DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 11

Brick type: Hollow Calcium silica brick KSL-8DF

Table C29: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	50	50	1,00		50	50	1,00
	120	250	2,00		120	120	2,00

Table C30: Factors for anchor groups under shear load

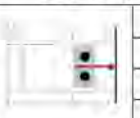
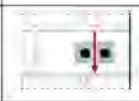
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,45		50	50	0,45
		250	50	1,15		250	50	1,20
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,30		50	50	1,00
		120	250	2,00		120	250	2,00

Table C31: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All Temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ 2)			$N_{Rk,b} = N_{Rk,p}$ 2)			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 12$ N/mm² 1)									
M8 / M10/ IG-M6	SH 16	130	5,0	4,5	3,5	5,0	4,5	3,5	3,5
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 130	5,0	4,5	3,5	5,0	4,5	3,5	6,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C26. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C32: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow calcium silica brick KSL-8DF
Group factors, characteristic Resistances and Displacements

Annex C 12

Brick type: Hollow Calcium silica brick KSL-12DF

Table C33: Stone description

Brick type		Hollow Calcium silica brick KSL-12DF
Density	ρ [kg/dm³]	≥ 1,4
Normalised mean compressive strenght	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,75} \leq 1,0$
Code		EN 771-2:2011+A1:2015
Producer (Country)		e.g. KS-Wemding (DE)
Brick dimensions	[mm]	≥ 498 x 175 x 238
Drilling method		Rotary drilling

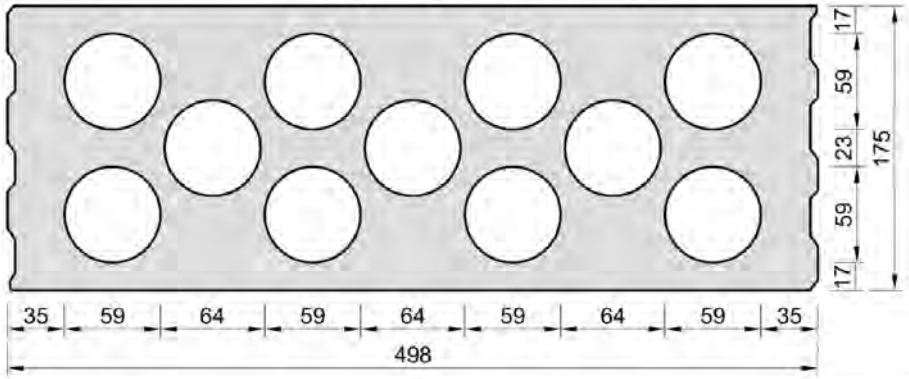


Table C34: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 5	≤ 5	≤ 4	≤ 5	≤ 5
Char. Edge distance (under fire conditions)	c_{cr}; ($c_{cr,fi}$)	[mm]	120 (2 h_{ef}) (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing (under fire conditions)	$s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$)	[mm]	500 (4 h_{ef})						
	$s_{cr,\perp}$; ($s_{cr,fi,\perp}$)	[mm]	120 (4 h_{ef})						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C35: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,45		50	1,00
	120	1,00		500	1,00		120	1,00

Table C36: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	50	50	1,50		50	50	1,00
	120	500	2,00		120	240	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow calcium silica brick KSL-12DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 13

Brick type: Hollow Calcium silica brick KSL-12DF

Table C37: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		50	50	0,55		50	50	0,50
		500	50	1,00		500	50	1,00
		500	500	2,00		500	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\perp,V\,II}$
		50	50	2,00		50	50	1,30
		120	500	2,00		120	250	2,00

Table C38: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/w (w/d)
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 12$ N/mm² [1]									
M8 / M10/ IG-M6	SH 16	130	3,5	3,5	2,5	3,5	3,5	2,5	3,5
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 130	3,5	3,5	2,5	3,5	3,5	2,5	7,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C33. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C39: Displacements

Anchor size	h_{ef}	$\delta N / N$	δN_0	δN_∞	$\delta V / V$	δV_0	δV_∞
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	$0,13*N_{Rk}/3,5$	$2*\delta N_0$	0,55	$0,55*V_{Rk}/3,5$	$1,5*\delta V_0$
M16	all				0,31	$0,31*V_{Rk}/3,5$	$1,5*\delta V_0$

Table C40: Characteristic values of tension and shear load resistances under fire exposure

Anchor size	Perforated sleeve	Effective anchorage depth	Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$			
		h_{ef}	R30	R60	R90	R120
		[mm]	[kN]			
M8 / M10 /IG-M6	SH 16	130	0,37	0,27	0,17	-[1]
M12 / IG-M8	SH 20	≥ 130				
M16 / IG-M10	SH 20	≥ 130				0,12

1) no performance assessed

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex C 14**
Performances hollow calcium silica brick KSL-12DF Group factors, characteristic Resistances and Displacements	

Brick type: Solid clay brick 1DF

Table C41: Stone description

Brick type		Solid clay brick Mz-1DF
Density	ρ [kg/dm³]	≥ 2,0
Normalised mean compressive strenght	f_b [N/mm²]	≥ 20
Conversion factor for lower compressive strengths		$(f_b / 20)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	≥ 240 x 115 x 55
Drilling method		Hammer drilling

Table C42: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Char. Edge distance	c_{cr}	[mm]	150 (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\,II}$	[mm]	240						
	$s_{cr,\,\perp}$	[mm]	130						
Minimum Spacing	$s_{min,\,II}$; $s_{min,\,\perp}$	[mm]	65						

Table C43: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V\,II}$
	60	0,75		60	0,10		60	0,30
	150	1,00		100	0,50		100	0,65
	180	1,00		240	1,00		150	1,00

Table C44: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,\,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,\,N}$
	60	65	0,85		60	65	1,00
	150	65	1,15		150	65	1,20
	150	240	2,00		150	130	2,00

Table C45: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		60	65	0,40		60	65	0,30
		240	65	2,00		240	65	2,00
		240	240	2,00		240	130	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		60	65	1,75		60	65	1,10
		150	65	2,00		150	65	2,00
		150	240	2,00		150	130	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances solid clay brick 1DF
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 15

Brick type: Solid clay brick 1DF

Table C46: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ 2)			$N_{Rk,b} = N_{Rk,p}$ 2)			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 20$ N/mm² 1)									
M8	-	80	7,0	6,0	6,0	7,0	6,0	6,0	8,0
M10 / IG-M6	-	≥ 90							
M12 / IG-M8	-	≥ 100							
M16 / IG-M10	-	≥ 100	8,0	6,5	6,5	8,0	6,5	6,5	12,0
M8	SH 12	80	7,0	6,0	6,0	7,0	6,0	6,0	8,0
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20								
M16 / IG-M10	SH 20	≥ 85	8,0	6,5	6,5	8,0	6,5	6,5	12,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C41. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C47: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,1	$0,1*N_{Rk} / 3,5$	$2*\delta_{N0}$	0,3	$0,3*V_{Rk} / 3,5$	$1,5*\delta_{V0}$
M16	all				0,1	$0,1*V_{Rk} / 3,5$	$1,5*\delta_{V0}$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances solid clay brick 1DF
Characteristic Resistances and Displacements

Annex C 16

Brick type: Solid clay brick 2DF

Table C48: Stone description

Brick type		Solid clay brick Mz- 2DF
Density	ρ [kg/dm³]	≥ 2,0
Normalised mean compressive strenght	f_b [N/mm²]	≥ 28
Conversion factor for lower compressive strengths		$(f_b / 28)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	≥ 240 x 115 x 113
Drilling method		Hammer drilling

Table C49: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Char. Edge distance (under fire conditions)	c_{cr}; ($c_{cr,fi}$)	[mm]	150 (2 h_{ef}) (for shear loads perpendicular to the free edge: c_{cr} = 240)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing (under fire conditions)	$s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$)	[mm]	240 (4 h_{ef})						
	$s_{cr,\perp}$; ($s_{cr,fi,\perp}$)	[mm]	240 (4 h_{ef})						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C50: Reduction factors for single anchors at the edge

Tension load			Shear load perpendicular to free edge			Shear load parallel to free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50[1]	1,00		50	0,20		50	1,00
	150[1]	1,00		125	0,50			
	180	1,00		240	1,00		150	1,00

1) All applications, except for hef = 200mm and without sleeve

Table C51: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	50[1]	50	1,50		50[1]	50	0,80
	150[1]	240	2,00		150[1]	240	2,00
	180[2]	60	1,00		180[2]	60	1,00
	180[2]	240	1,55		180[2]	120	2,00
	240[2]	240	2,00				

1) All applications, except for hef = 200mm and without sleeve
2) Only for application with hef = 200mm and without sleeve

Table C52: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\parallel,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		50	50	0,40		50	50	0,20
		240	50	1,20		240	50	0,60
		240	240	2,00		240	125	1,00
						240	240	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\parallel,V\parallel}$		with c ≥	with s ≥	$\alpha_{g\perp,V\parallel}$
		50	50	1,20		50	50	1,00
		150	240	2,00		50	125	1,00
						150	240	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances solid clay brick 2DF
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 17

Brick type: Solid clay brick 2DF

Table C53: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2)]			$N_{Rk,b} = N_{Rk,p}$ [2)]			$V_{Rk,b}$ [2)]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 28$ N/mm² [1)]									
M8	-	80	9,0	9,0	7,5	9,0	9,0	7,5	9,5
M10 / IG-M6	-	≥ 90							
M12 / IG-M8	-	≥ 100	9,0	9,0	7,5	9,0	9,0	7,5	12
M16 / IG-M10	-	≥ 100	9,0	9,0	7,5	9,0	9,0	7,5	12 [3)]
M10 / M12 / IG-M6 / IG-M8	-	200	11,5	11,5	10,0	6,0	6,0	5,0	8,0
M16 / IG-M10	-	200	11,5	11,5	10,0	6,0	6,0	5,0	12,0
M8	SH 12	80	9,0	9,0	7,5	9,0	9,0	7,5	9,5
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20	≥ 85	9,0	9,0	7,5	9,0	9,0	7,5	12,0
M16 / IG-M10	SH 20	≥ 85	9,0	9,0	7,5	9,0	9,0	7,5	12,0 [3)]

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C48. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

3) Valid for all stone strengths with min. 10 N/mm²

Table C54: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,1	$0,1*N_{Rk}$ / 3,5	$2*\delta N0$	0,3	$0,3*V_{Rk}$ / 3,5	$1,5*\delta V0$
M16	all				0,1	$0,1*V_{Rk}$ / 3,5	$1,5*\delta V0$

Table C55: Characteristic values of tension and shear load resistances under fire exposure

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$			
		h_{ef}	R30	R60	R90	R120
		[mm]	[kN]			
M8	-	80	0,51	0,44	0,36	0,33
M10 / IG-M6	-	≥ 90				
M12 / IG-M8	-	≥ 100				
M16 / IG-M10	-	≥ 100				
M8	SH 12	80	0,36	0,26	0,15	0,10
M8 / M10 /IG-M6	SH 16	≥ 85	0,36	0,26	0,15	0,10
		130	0,92	0,74	0,57	0,49
M12 / M16 / IG-M8 /IG-M10	SH 20	≥ 85	0,36	0,26	0,15	0,10
		≥ 130	0,92	0,74	0,57	0,49

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances solid clay brick 2DF
Characteristic Resistances and Displacements

Annex C 18

Brick type: Hollow clay brick 10 DF

Table C56: Stone description

Brick type		Hollow clay brick HLZ-10DF
Density	ρ [kg/dm³]	≥ 1,25
Normalised mean compressive strenght	f_b [N/mm²]	≥ 20
Conversion factor for lower compressive strengths		$(f_b / 20)^{0.5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	300 x 240 x 249
Drilling method		Rotary drilling

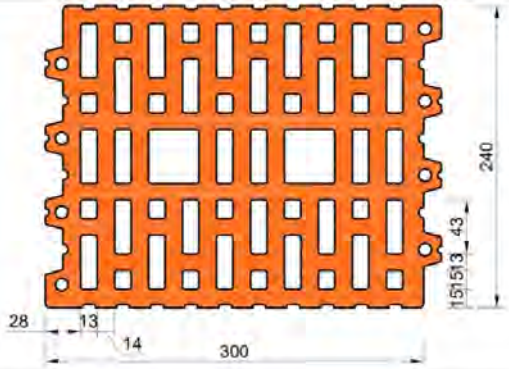


Table C57: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 10	≤ 10	≤ 10	≤ 5	≤ 5	≤ 10
Char. Edge distance (under fire conditions)	c_{cr}; ($c_{cr,fi}$)	[mm]	120 (2 h_{ef}) (for shear loads perpendicular to the free edge: c_{cr} = 300)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing (under fire conditions)	$s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$)	[mm]	300 (4 h_{ef})						
	$s_{cr,\perp}$; ($s_{cr,fi,\perp}$)	[mm]	250 (4 h_{ef})						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C58: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,20		50	1,00
	120	1,00		300	1,00		120	1,00

Table C59: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	50	50	1,55		50	50	1,00
	120	300	2,00		120	250	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick HLZ 10DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 19

Brick type: Hollow clay brick 10 DF

Table C60: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		50	50	0,30		50	50	0,20
		300	50	1,40		300	50	1,00
		300	300	2,00		300	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\perp,V\,II}$
		50	50	1,85		50	50	1,00
		120	300	2,00		120	250	2,00

Table C61: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2)]			$N_{Rk,b} = N_{Rk,p}$ [2)]			$V_{Rk,b}$ [2)]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 20$ N/mm² 1)									
M8	SH 12	80	2,5	2,5	2,0	2,5	2,5	2,0	8,0
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20	≥ 85	5,0	5,0	4,5	5,0	5,0	4,5	8,0
M16 / IG-M10	SH 20	≥ 85	5,0	5,0	4,5	5,0	5,0	4,5	11,5

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C56. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C62: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	$0,13*N_{Rk}$ / 3,5	$2*\delta N0$	0,55	$0,55*V_{Rk}$ / 3,5	$1,5*\delta V0$
M16	all				0,31	$0,31*V_{Rk}$ / 3,5	$1,5*\delta V0$

Table C63: Characteristic values of tension and shear load resistances under fire exposure

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$			
		h_{ef}	R30	R60	R90	R120
		[mm]	[kN]			
M8 / M10 /IG-M6	SH 16	130	0,57	0,39	0,21	0,12
M12 / M16 / IG-M8 IG-M10	SH 20	≥ 130				

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick HLZ 10DF
Group factors, characteristic Resistances and Displacements

Annex C 20

Brick type: Hollow Clay brick Porotherm Homebric

Table C64: Stone description

Brick type		Hollow clay brick Porotherm Homebric
Density	ρ [kg/dm³]	≥ 0,70
Normalised mean compressive strenght	f_b [N/mm²]	≥ 10
Conversion factor for lower compressive strengths		$(f_b / 10)^{0.5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Wienerberger (FR)
Brick dimensions	[mm]	500 x 200 x 300
Drilling method		Rotary drilling

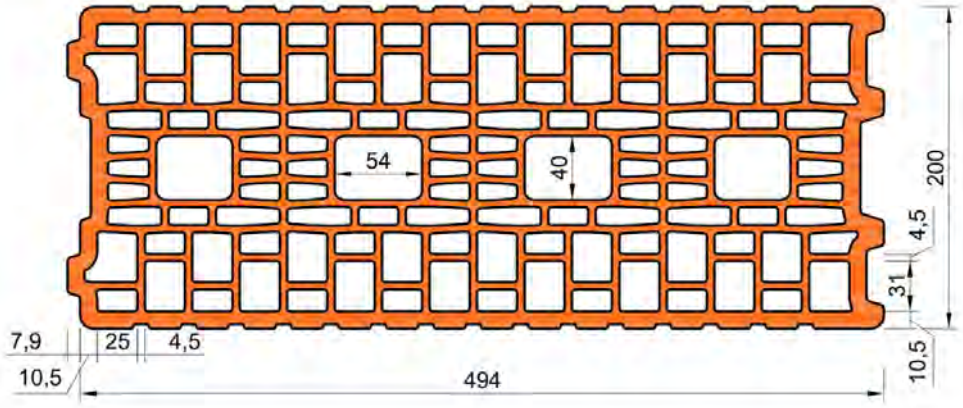


Table C65: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	500						
	$s_{cr,\perp}$	[mm]	300						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	120						

Table C66: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	120	1,00		120	0,30		120	0,60
				250	0,60			
	120	1,00		500	1,00		200	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Porotherm Homebric
Description of the stone, Installation parameters, Reductionfactors

Annex C 21

Brick type: Hollow Clay brick Porotherm Homebric

Table C67: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	120	100	1,00		120	100	1,00
	200	100	2,00		200	100	1,20
	120	500	2,00		120	300	2,00

Table C68: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		120	100	0,30		120	100	0,30
		250	100	0,60		250	100	0,60
		500	100	1,00		120	300	2,00
		120	500	2,00				
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	300	2,00

Table C69: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}							
			Use condition							
			d/d			w/d w/w			d/d w/d w/w	
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges	
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]	
		[mm]	[kN]							
Normalised mean compressive strength $f_b \geq 10$ N/mm² [1]										
M8	SH 12	80	1,2						3,0	
M8 / M10/ IG-M6	SH 16	≥ 85	1,2						3,0	
		130	1,5						3,5	
M12 / M16/ IG-M8 / IG-M10	SH 20	≥ 85	1,2						4,0	
		≥ 130	1,5						4,0	

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C64. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C70: Displacements

Anchor size	h_{ef}	$\delta N / N$	$\delta N0$	$\delta N\infty$	$\delta V / V$	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	$0,13*N_{Rk} / 3,5$	$2*\delta N0$	0,55	$0,55*V_{Rk} / 3,5$	$1,5*\delta V0$
M16	all				0,31	$0,31*V_{Rk} / 3,5$	$1,5*\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Porotherm Homebric
Group factors, characteristic Resistances and Displacements

Annex C 22

Brick type: Hollow Clay brick BGV Thermo

Table C71: Stone description

Brick type		Hollow clay brick BGV Thermo
Density	ρ [kg/dm³]	≥ 0,60
Normalised mean compressive strenght	f_b [N/mm²]	≥ 10
Conversion factor for lower compressive strengths		$(f_b / 10)^{0.5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Leroux (FR)
Brick dimensions	[mm]	500 x 200 x 314
Drilling method		Rotary drilling

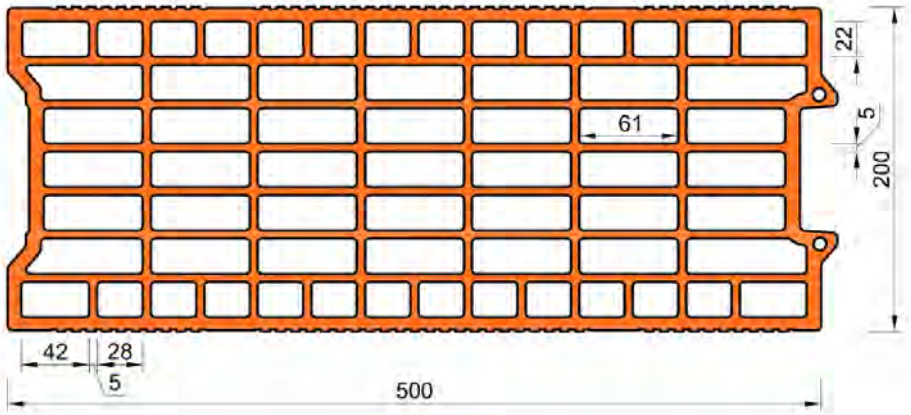


Table C72: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	500						
	$s_{cr,\perp}$	[mm]	315						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	120						

Table C73: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	120	1,00		120	0,30		120	0,60
				250	0,60			
	120	1,00		500	1,00		250	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick BGV Thermo
Description of the stone, Installation parameters, Reductionfactors

Annex C 23

Brick type: Hollow Clay brick BGV Thermo

Table C74: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	120	100	1,00		120	100	1,00
	200	100	1,70		200	100	1,10
	120	500	2,00		120	315	2,00

Table C75: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	315	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	315	2,00

Table C76: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2)]			$N_{Rk,b} = N_{Rk,p}$ [2)]			$V_{Rk,b}$ [2)]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 10$ N/mm² [1)]									
M8	SH 12	80	0,9						3,5
M8 / M10/ IG-M6	SH 16	≥ 85	0,9						3,5
		130	2,0		1,5	2,0		1,5	4,0
M12 / M16 IG-M8 / IG-M10	SH 20	≥ 85	0,9						4,0
		≥ 130	2,0		1,5	2,0		1,5	4,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C71. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C77: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick BGV Thermo
Group factors, characteristic Resistances and Displacements

Annex C 24

Brick type: Hollow Clay brick Calibric R+

Table C78: Stone description

Brick type		Hollow clay brick Calibric R+
Density	ρ [kg/dm³]	≥ 0,60
Normalised mean compressive strenght	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Leroux (FR)
Brick dimensions	[mm]	500 x 200 x 314
Drilling method		Rotary drilling

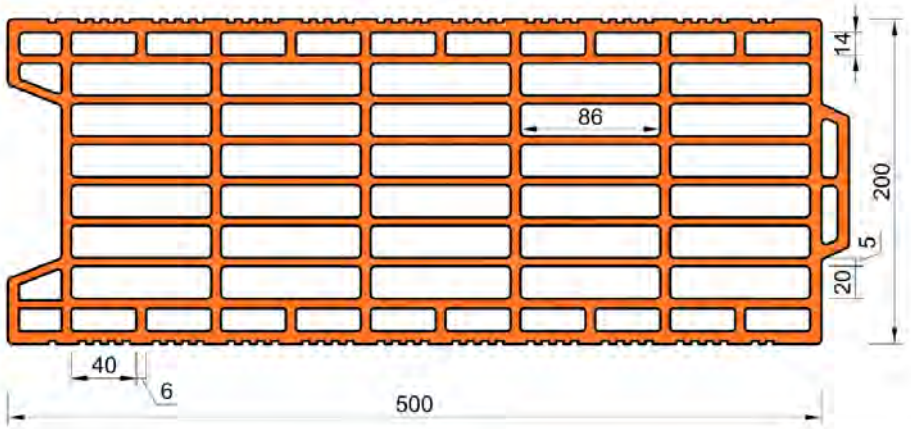
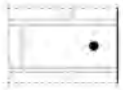


Table C79: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	500						
	$s_{cr,\perp}$	[mm]	315						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	120						

Table C80: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	120	1,00		120	0,15		120	0,30
				250	0,30			
	120	1,00		500	1,00		250	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Calibric R+
Description of the stone, Installation parameters, Reductionfactors

Annex C 25

Brick type: Hollow Clay brick Calibric R+

Table C81: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	120	100	1,00		120	100	1,00
	175	100	1,70		175	100	1,10
	120	500	2,00		120	315	2,00

Table C82: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	315	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	100	1,00		120	100	1,00
		120	500	2,00		120	315	2,00

Table C83: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ 2)			$N_{Rk,b} = N_{Rk,p}$ 2)			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 12$ N/mm² 1)									
M8	SH 12	80	1,2	1,2	0,9	1,2	1,2	0,9	4,0
M8 / M10/ IG-M6	SH 16	≥ 85	1,2	1,2	0,9	1,2	1,2	0,9	5,5
		130	1,5	1,5	1,2	1,5	1,5	1,2	5,5
M12 / M16 IG-M8 /IG-M10	SH 20	≥ 85	1,2	1,2	0,9	1,2	1,2	0,9	8,5
		≥ 130	1,5	1,5	1,2	1,5	1,5	1,2	8,5

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C78. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C84: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow Clay brick Calibric R+
Group factors, characteristic Resistances and Displacements

Annex C 26

Brick type: Hollow Clay brick Urbanbric

Table C85: Stone description

Brick type		Hollow clay brick Urbanbric
Density	ρ [kg/dm³]	≥ 0,70
Normalised mean compressive strenght	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Imerys (FR)
Brick dimensions	[mm]	560 x 200 x 274
Drilling method		Rotary drilling

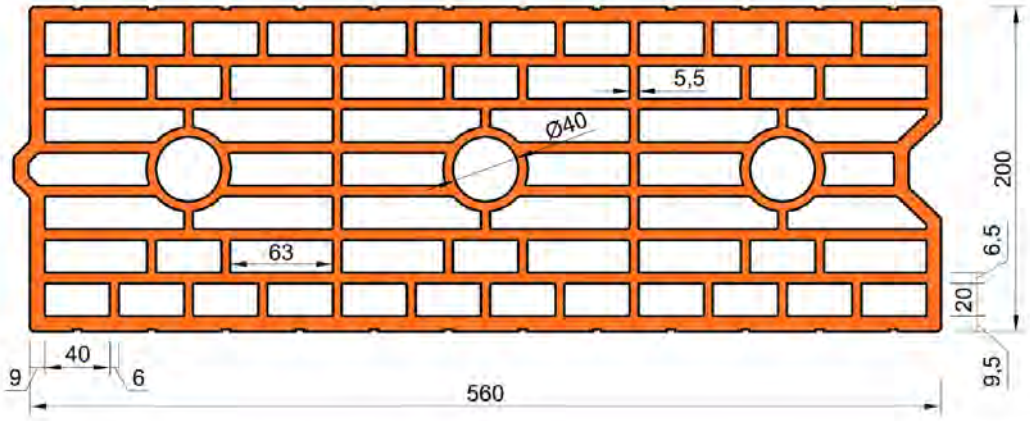
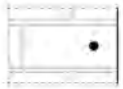


Table C86: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	560						
	$s_{cr,\perp}$	[mm]	275						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	100						

Table C87: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	120	1,00		120	0,25		120	0,50
				250	0,50			
	120	1,00		500	1,00		250	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Urbanbric
Description of the stone, Installation parameters, Reductionfactors

Annex C 27

Brick type: Hollow Clay brick Urbanbric

Table C88: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	120	100	1,00		120	100	1,00
	185	100	1,90		185	100	1,10
	120	560	2,00		120	275	2,00

Table C89: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		120	100	1,00		120	100	1,00
		120	560	2,00		120	275	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	100	1,00		120	100	1,00
		120	560	2,00		120	275	2,00

Table C90: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ 2)			$N_{Rk,b} = N_{Rk,p}$ 2)			$V_{Rk,b}$ 2)
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 12$ N/mm² 1)									
M8	SH 12	80	1,2	1,2	0,9	1,2	1,2	0,9	4,5
M8 / M10/ IG-M6	SH 16	≥ 85	1,2	1,2	0,9	1,2	1,2	0,9	4,5
		130	3,0	3,0	2,5	3,0	3,0	2,5	4,5
M12 / M16 IG-M8 / IG-M10	SH 20	≥ 85	1,2	1,2	0,9	1,2	1,2	0,9	5,0
		≥ 130	3,0	3,0	2,5	3,0	3,0	2,5	5,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C85. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C91: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Urbanbric
Group factors, characteristic Resistances and Displacements

Annex C 28

Brick type: Hollow Clay brick Brique creuse C40

Table C92: Stone description

Brick type		Hollow clay brick Brique creuse C40
Density	ρ [kg/dm³]	≥ 0,70
Normalised mean compressive strenght	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0.5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Terreal (FR)
Brick dimensions	[mm]	500 x 200 x 200
Drilling method		Rotary drilling

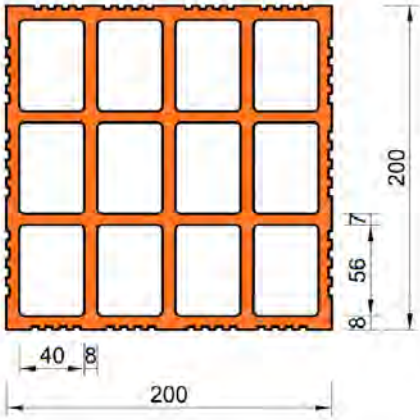


Table C93: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 500)						
Minimum Edge Distance	c_{min}	[mm]	120						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	500						
	$s_{cr,\perp}$	[mm]	200						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	200						

Table C94: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	120	1,00		120	0,83		120	1,00
	120	1,00		500	1,00		250	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Brique Creuse C40
Description of the stone, Installation parameters, Reductionfactors

Annex C 29

Brick type: Hollow Clay brick Brique creuse C40

Table C95: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	120	500	2,00		120	200	2,00

Table C96: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		120	500	2,00		120	200	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		120	500	2,00		120	200	2,00

Table C97: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 12$ N/mm² [1]									
M8	SH 12	80	1,2	1,2	0,9	1,2	1,2	0,9	1,5
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C92. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C98: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Brique Creuse C40
Group factors, characteristic Resistances and Displacements

Annex C 30

Brick type: Hollow Clay brick Blocchi Leggeri

Table C99: Stone description

Brick type		Hollow clay brick Blocchi Leggeri
Density	ρ [kg/dm³]	≥ 0,60
Normalised mean compressive strenght	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Wienerberger (IT)
Brick dimensions	[mm]	250 x 120 x 250
Drilling method		Rotary drilling

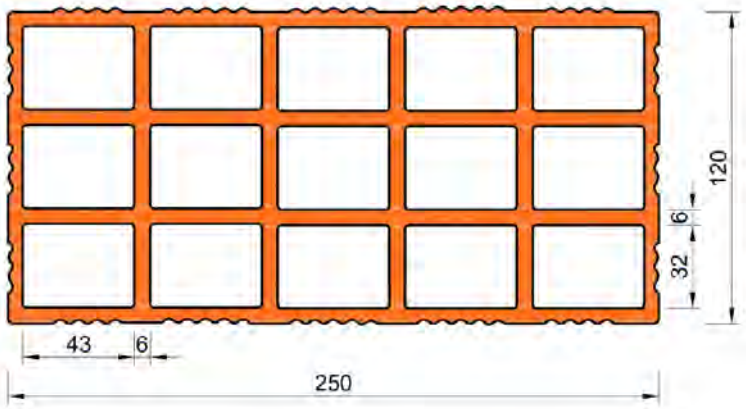
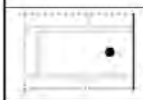
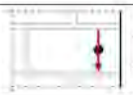


Table C100: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	100						

Table C101: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	60	1,00		60	0,40		60	0,40
	120	1,00		250	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Blocchi Leggeri
Description of the stone, Installation parameters, Reductionfactors

Annex C 31

Brick type: Hollow Clay brick Blocchi Leggeri

Table C102: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	60	100	1,00		60	100	2,00
	120	250	2,00		120	250	2,00

Table C103: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		60	100	0,40		60	100	0,40
		250	100	1,00		250	100	1,00
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		60	100	0,40		60	100	0,40
		120	100	1,00		120	100	1,00
		120	250	2,00		120	250	2,00

Table C104: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2)]			$N_{Rk,b} = N_{Rk,p}$ [2)]			$V_{Rk,b}$ [2)]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 12$ N/mm² 1)									
M8	SH 12	80	0,6	0,6	0,6	0,6	0,6	0,6	3,5
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C99. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C105: Displacements

Anchor size	h_{ef}	$\delta N / N$	$\delta N0$	$\delta N\infty$	$\delta V / V$	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Blocchi Leggeri
Group factors, characteristic Resistances and Displacements

Annex C 32

Brick type: Hollow Clay brick Doppio Uni

Table C106: Stone description

Brick type		Hollow clay brick Doppio Uni
Density	ρ [kg/dm³]	≥ 0,90
Normalised mean compressive strenght	f_b [N/mm²]	≥ 28
Conversion factor for lower compressive strengths		$(f_b / 28)^{0.5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Wienerberger (IT)
Brick dimensions	[mm]	250 x 120 x 120
Drilling method		Rotary drilling

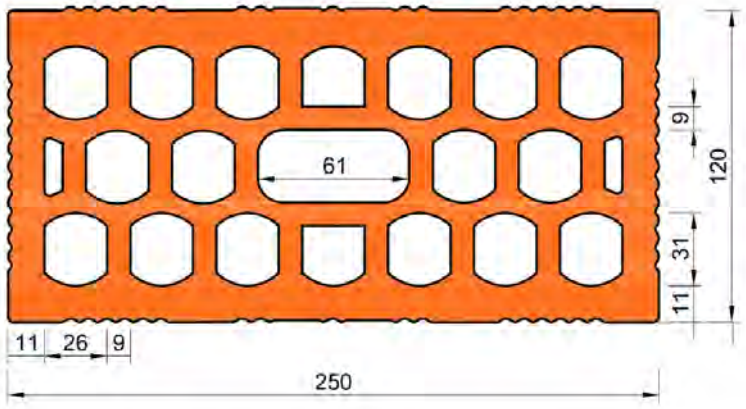


Table C107: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	100						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	120						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	100						

Table C108: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	100	1,00		100	0,50		100	1,00
	120	1,00		250	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Doppio Uni
Description of the stone, Installation parameters, Reductionfactors

Annex C 33

Brick type: Hollow Clay brick Doppio Uni

Table C109: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	100	100	1,00		100	120	2,00
	120	250	2,00		120	120	2,00

Table C110: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		100	100	1,00		100	100	1,00
		250	250	2,00		250	120	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		100	100	1,00		100	100	1,00
		120	250	2,00		120	120	2,00

Table C111: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2)]			$N_{Rk,b} = N_{Rk,p}$ [2)]			$V_{Rk,b}$ [2)]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 28$ N/mm² [1)]									
M8	SH 12	80	1,2	1,2	0,9	1,2	1,2	0,9	2,5
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C106. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C112: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Doppio Uni
Group factors, characteristic Resistances and Displacements

Annex C 34

Brick type: Hollow clay brick Coriso WS07 with insulation

Table C113: Stone description

Brick type		Hollow clay brick Coriso WS07
Insulationmaterial		Rock wool
Density	ρ [kg/dm³]	≥ 0,55
Normalised mean compressive strenght	f_b [N/mm²]	≥ 6
Conversion factor for lower compressive strengths		$(f_b / 6)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Unipor (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

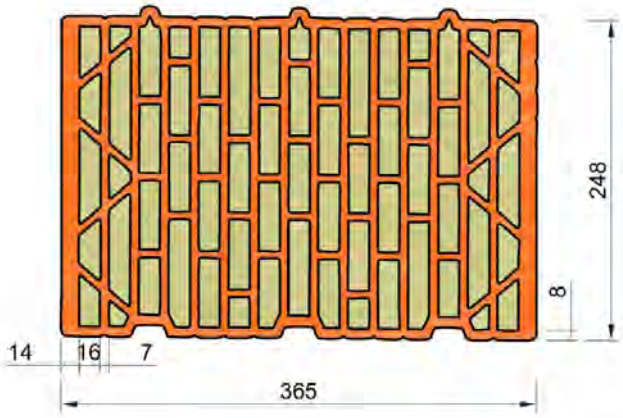


Table C114: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 5
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C115: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
•	50	1,00	→	50	0,30	↓	50	1,00
	120	1,00		250	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Coriso WS07 with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 35

Brick type: Hollow clay brick Coriso WS07 with insulation

Table C116: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	50	50	1,50		50	50	1,00
	120	250	2,00		120	250	2,00

Table C117: Factors for anchor groups under shear load

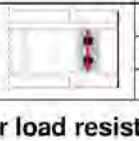
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,40		50	50	0,40
		250	50	1,00		250	50	1,20
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,65		50	50	1,00
		120	250	2,00		120	250	2,00

Table C118: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 6$ N/mm² [1]									
M8	SH 12	80	1,5	1,5	1,5	1,5	1,5	1,5	5,0
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C113. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C119: Displacements

Anchor size	h_{ef}	$\delta N / N$	$\delta N0$	$\delta N\infty$	$\delta V / V$	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow Clay brick Coriso WS07 with insulation
Group factors, characteristic Resistances and Displacements

Annex C 36

Brick type: Hollow clay brick T7 MW with insulation

Table C120: Stone description

Brick type		Hollow clay brick T7 MW
Insulation material		Rock wool
Density	ρ [kg/dm³]	≥ 0,59
Normalised mean compressive strenght	f_b [N/mm²]	≥ 8
Conversion factor for lower compressive strengths		$(f_b / 8)^{0.5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

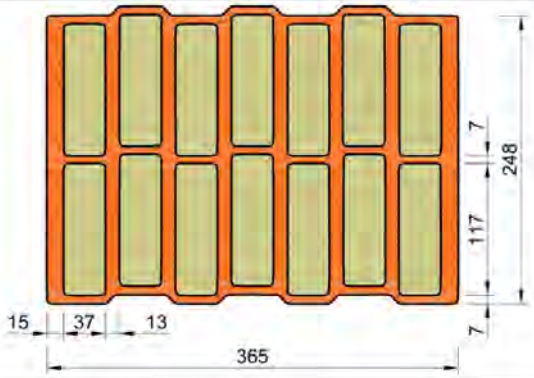


Table C121: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 5
Char. Edge distance (under fire conditions)	c_{cr}; ($c_{cr,fi}$)	[mm]	120 (2 h_{ef}) (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing (under fire conditions)	$s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$)	[mm]	250 (4 h_{ef})						
	$s_{cr,\perp}$; ($s_{cr,fi,\perp}$)	[mm]	250 (4 h_{ef})						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C122: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,35		50	1,00
	120	1,00		250	1,00		120	1,00

Table C123: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	50	50	1,40		50	50	1,15
	120	250	2,00		120	250	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick T7 MW with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 37

Brick type: Hollow clay brick T7 MW with insulation

Table C124: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		50	50	0,60		50	50	0,40
		250	50	1,55		250	50	1,00
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\perp,V\,II}$
		50	50	2,00		50	50	1,20
		120	250	2,00		120	250	2,00

Table C125: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 8$ N/mm² [1]									
M8	SH 12	80	2,0	2,0	1,5	2,0	2,0	1,5	3,0
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20	≥ 85							
M16 / IG-M10	SH 20	≥ 85							4,5

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C120. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C126: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	$0,13*N_{Rk}$ / 3,5	$2*\delta N0$	0,55	$0,55*V_{Rk}$ / 3,5	$1,5*\delta V0$
M16	all				0,31	$0,31*V_{Rk}$ / 3,5	$1,5*\delta V0$

Table C127: Characteristic values of tension and shear load resistances under fire exposure

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$			
		h_{ef}	R30	R60	R90	R120
		[mm]	[kN]			
M8 / M10 /IG-M6	SH 16	130	0,64	0,37	0,11	-1)
M12 / M16 / IG-M8 IG-M10	SH 20	≥ 130				

1) no performance assessed

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex C 38**
Performances hollow clay brick T7 MW with insulation Group factors, characteristic Resistances and Displacements	

Brick type: Hollow clay brick T8 P with insulation

Table C128: Stone description

Brick type		Hollow clay brick T8 P
Insulation material		Perlite
Density	ρ [kg/dm³]	≥ 0,56
Normalised mean compressive strenght	f_b [N/mm²]	≥ 6
Conversion factor for lower compressive strengths		$(f_b / 6)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Wienerberger (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

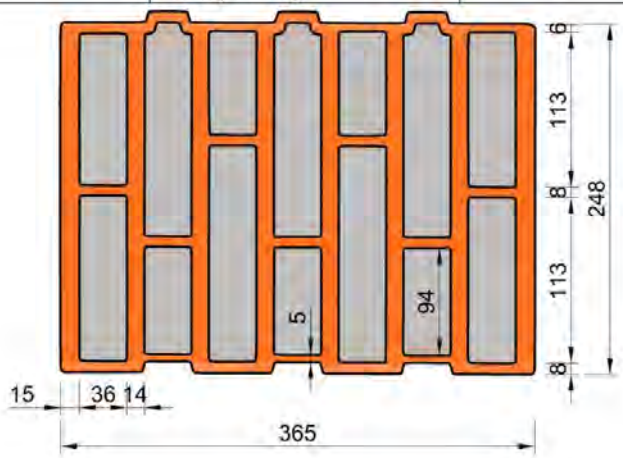


Table C129: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 10	≤ 10	≤ 4	≤ 4	≤ 4
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C130: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,25		50	1,00
	120	1,00		250	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick T8 P with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 39

Brick type: Hollow clay brick T8 P with insulation

Table C131: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	50	50	1,30		50	50	1,10
	120	250	2,00		120	250	2,00

Table C132: Factors for anchor groups under shear load

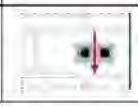
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,40		50	50	0,30
		250	50	1,35		250	50	1,20
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,70		50	50	1,00
		120	250	2,00		120	250	2,00

Table C133: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 6$ N/mm² [1]									
M8	SH 12	80	1,5	1,5	1,5	1,5	1,5	1,5	4,5
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20	≥ 85							
M16 / IG-M10	SH 20	≥ 85	2,5	2,5	2,0	2,5	2,5	2,0	7,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C128. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C134: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick T8 P with insulation
Group factors, characteristic Resistances and Displacements

Annex C 40

Brick type: Hollow clay brick Thermoplan MZ90-G with insulation

Table C135: Stone description

Brick type		Hollow clay brick Thermoplan MZ90-G
Insulation material		Rock wool
Density	ρ [kg/dm³]	≥ 0,68
Normalised mean compressive strenght	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Mein Ziegelhaus (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

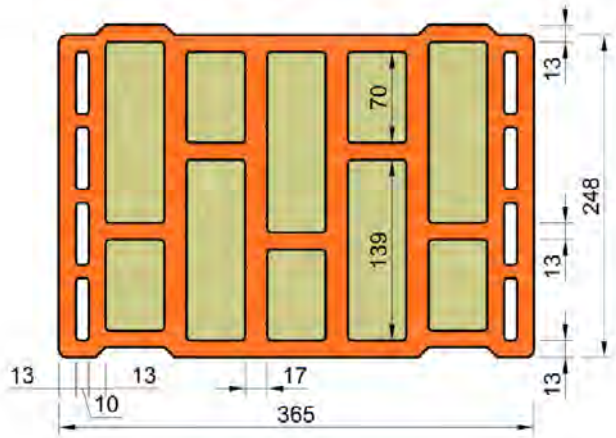


Table C136: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 10	≤ 10	≤ 4	≤ 4	≤ 4
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C137: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,25		50	1,00
	120	1,00		250	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Thermoplan MZ90-G with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 41

Brick type: Hollow clay brick Thermoplan MZ90-G with insulation

Table C138: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	50	50	1,00		50	50	1,00
	120	250	2,00		120	250	2,00

Table C139: Factors for anchor groups under shear load

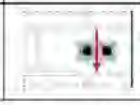
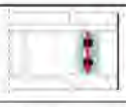
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,75		50	50	0,50
		250	50	2,00		250	50	1,70
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,65		50	50	1,15
		120	250	2,00		120	250	2,00

Table C140: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 12$ N/mm² [1]									
M8	SH 12	80	3,0	3,0	2,5	3,0	3,0	2,5	4,0
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20	≥ 85							
M16 / IG-M10	SH 20	≥ 85	3,5	3,5	3,0	3,5	3,5	3,0	7,5

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C135. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C141: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*δ_{N0}	0,55	0,55*V_{Rk} / 3,5	1,5*δ_{V0}
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*δ_{V0}

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Thermoplan MZ90-G with insulation
Group factors, characteristic Resistances and Displacements

Annex C 42

Brick type: Hollow clay brick Poroton FZ7,5 with insulation

Table C142: Stone description

Brick type		Hollow clay brick Poroton FZ7,5
Insulation material		Rock wool
Density	ρ [kg/dm³]	≥ 0,70
Normalised mean compressive strenght	f_b [N/mm²]	≥ 8
Conversion factor for lower compressive strengths		$(f_b / 8)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Schlagmann (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

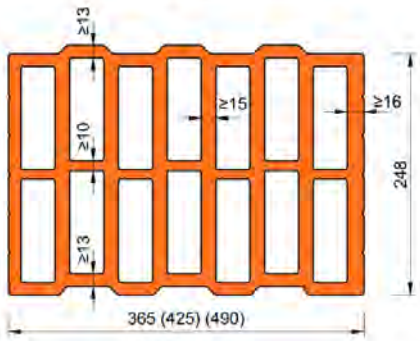


Table C143: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 5
Char. Edge distance (under fire conditions)	c_{cr}; ($c_{cr,fi}$)	[mm]	120 (2 h_{ef}) (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing (under fire conditions)	$s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$)	[mm]	250 (4 h_{ef})						
	$s_{cr,\perp}$; ($s_{cr,fi,\perp}$)	[mm]	250 (4 h_{ef})						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C144: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,35		50	1,00
	120	1,00		250	1,00		120	1,00

Table C145: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	50	50	1,40		50	50	1,15
	120	250	2,00		120	250	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Poroton FZ7,5 with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 43

Brick type: Hollow clay brick Poroton FZ7,5 with insulation

Table C146: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		50	50	0,60		50	50	0,40
		250	50	1,55		250	50	1,00
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\perp,V\,II}$
		50	50	2,00		50	50	1,20
		120	250	2,00		120	250	2,00

Table C147: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 8$ N/mm² [1]									
M8	SH 12	80	2,0	2,0	1,5	2,0	2,0	1,5	3,0
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20	≥ 85							
M16 / IG-M10	SH 20	≥ 85							4,5

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C142. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C148: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Table C149: Characteristic values of tension and shear load resistances under fire exposure

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$			
		h_{ef}	R30	R60	R90	R120
		[mm]	[kN]			
M8 / M10 /IG-M6	SH 16	130	0,64	0,37	0,11	-1)
M12 / M16 / IG-M8 IG-M10	SH 20	≥ 130				

1) no performance assessed

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex C 44**
Performances hollow clay brick Poroton FZ7,5 with insulation Group factors, characteristic Resistances and Displacements	

Brick type: Hollow clay brick Poroton FZ9 with insulation

Table C150: Stone description

Brick type		Hollow clay brick Poroton FZ9
Insulation material		Rock wool
Density	ρ [kg/dm³]	≥ 0,90
Normalised mean compressive strenght	f_b [N/mm²]	≥ 10
Conversion factor for lower compressive strengths		$(f_b / 10)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Schlagmann (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

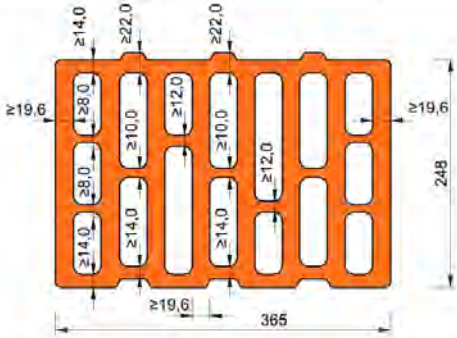


Table C151: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 5
Char. Edge distance (under fire conditions)	c_{cr}; ($c_{cr,fi}$)	[mm]	120 (2 h_{ef}) (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing (under fire conditions)	$s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$)	[mm]	250 (4 h_{ef})						
	$s_{cr,\perp}$; ($s_{cr,fi,\perp}$)	[mm]	250 (4 h_{ef})						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C152: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,35		50	1,00
	120	1,00		250	1,00		120	1,00

Table C153: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	50	50	1,40		50	50	1,15
	120	250	2,00		120	250	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Poroton FZ9 with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 45

Brick type: Hollow clay brick Poroton FZ9 with insulation

Table C154: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\perp}$
		50	50	0,60		50	50	0,40
		250	50	1,55		250	50	1,00
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\parallel}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,\parallel}$
		50	50	2,00		50	50	1,20
		120	250	2,00		120	250	2,00

Table C155: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 10$ N/mm² [1]									
M8	SH 12	80	2,0	2,0	1,5	2,0	2,0	1,5	3,0
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20	≥ 85							
M16 / IG-M10	SH 20	≥ 85							4,5

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C150. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,\parallel} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C156: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Table C157: Characteristic values of tension and shear load resistances under fire exposure

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$			
		h_{ef}	R30	R60	R90	R120
		[mm]	[kN]			
M8 / M10 /IG-M6	SH 16	130	0,64	0,37	0,11	-1)
M12 / M16 / IG-M8 IG-M10	SH 20	≥ 130				

1) no performance assessed

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex C 46**
Performances hollow clay brick Poroton FZ9 with insulation Group factors, characteristic Resistances and Displacements	

Brick type: Hollow clay brick Poroton S9 with insulation

Table C158: Stone description

Brick type		Hollow clay brick Poroton S9
Insulationmaterial		Perlite
Density	ρ [kg/dm³]	≥ 0,85
Normalised mean compressive strenght	f_b [N/mm²]	≥ 12
Conversion factor for lower compressive strengths		$(f_b / 12)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. Schlagmann (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

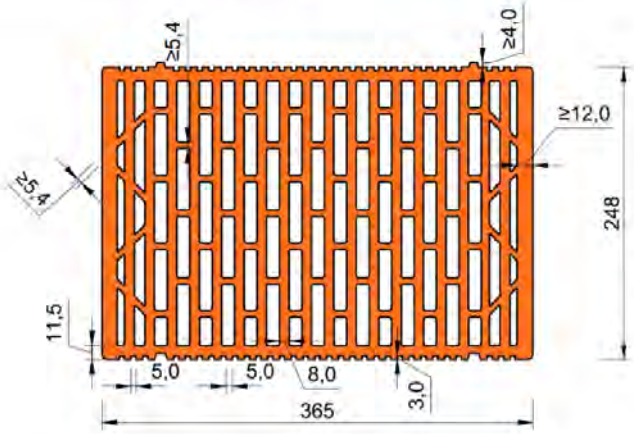


Table C159: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 5	≤ 5	≤ 10	≤ 10	≤ 5	≤ 5	≤ 5
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C160: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,30		50	1,00
	120	1,00		250	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Poroton S9 with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 47

Brick type: Hollow clay brick Poroton S9 with insulation

Table C161: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	50	50	1,50		50	50	1,00
	120	250	2,00		120	250	2,00

Table C162: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,40		50	50	0,40
		250	50	1,00		250	50	1,20
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,65		50	50	1,00
		120	250	2,00		120	250	2,00

Table C163: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 12$ N/mm² [1]									
M8	SH 12	80	1,5	1,5	1,5	1,5	1,5	1,5	5,0
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C158. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C164: Displacements

Anchor size	h_{ef}	$\delta N / N$	$\delta N0$	$\delta N\infty$	$\delta V / V$	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Poroton S9 with insulation
Group factors, characteristic Resistances and Displacements

Annex C 48

Brick type: Hollow clay brick Thermopor TV8+ with insulation

Table C165: Stone description

Brick type		Hollow clay brick Thermopor TV8+
Insulation material		Rock wool
Density	ρ [kg/dm³]	≥ 0,70
Normalised mean compressive strenght	f_b [N/mm²]	≥ 10
Conversion factor for lower compressive strengths		$(f_b / 10)^{0,5} \leq 1,0$
Code		EN 771-1:2011+A1:2015
Producer (Country)		e.g. THERMOPOR GmbH (DE)
Brick dimensions	[mm]	248 x 365 x 249
Drilling method		Rotary drilling

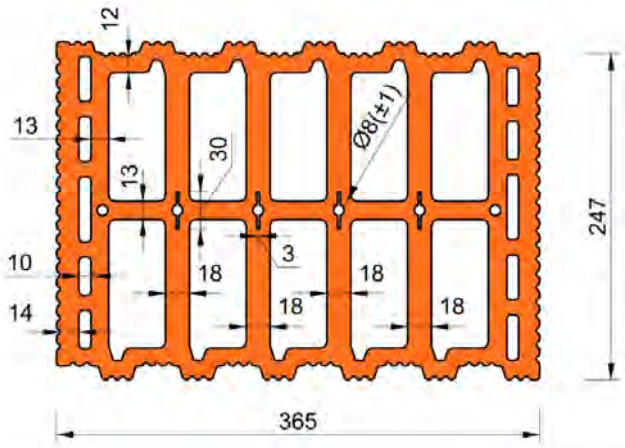


Table C166: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 10	≤ 10	≤ 4	≤ 4	≤ 4
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	250						
	$s_{cr,\perp}$	[mm]	250						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C167: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,25		50	1,00
	120	1,00		250	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Thermopor TV8+ with insulation
Description of the stone, Installation parameters, Reductionfactors

Annex C 49

Brick type: Hollow clay brick Thermopor TV8+ with insulation

Table C168: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	50	50	1,00		50	50	1,00
	120	250	2,00		120	250	2,00

Table C169: Factors for anchor groups under shear load

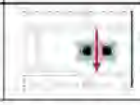
	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,75		50	50	0,50
		250	50	2,00		250	50	1,70
		250	250	2,00		250	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,65		50	50	1,15
		120	250	2,00		120	250	2,00

Table C170: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 10$ N/mm² [1]									
M8	SH 12	80	3,0	3,0	2,5	3,0	3,0	2,5	3,5
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / IG-M8	SH 20	≥ 85							
M16 / IG-M10	SH 20	≥ 85	3,5	3,5	3,0	3,5	3,5	3,0	7,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C165. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C171: Displacements

Anchor size	h_{ef}	δN / N	$\delta N0$	$\delta N\infty$	δV / V	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	0,13*N_{Rk} / 3,5	2*$\delta N0$	0,55	0,55*V_{Rk} / 3,5	1,5*$\delta V0$
M16	all				0,31	0,31*V_{Rk} / 3,5	1,5*$\delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow clay brick Thermopor TV8+ with insulation
Group factors, characteristic Resistances and Displacements

Annex C 50

Brick type: Hollow light weight concrete brick HBL 16DF

Table C172: Stone description

Brick type		Hollow light weight concrete brick HBL 16DF
Density	ρ [kg/dm³]	≥ 1,0
Normalised mean compressive strenght	f_b [N/mm²]	≥ 3,1
Conversion factor for lower compressive strengths		$(f_b/3{,}1)^{0.5} \leq 1{,}0$
Code		EN 771-3:2011+A1:2015
Producer (Country)		e.g. KLB Klimaleichtblock (DE)
Brick dimensions	[mm]	500 x 250 x 240
Drilling method		Rotary drilling

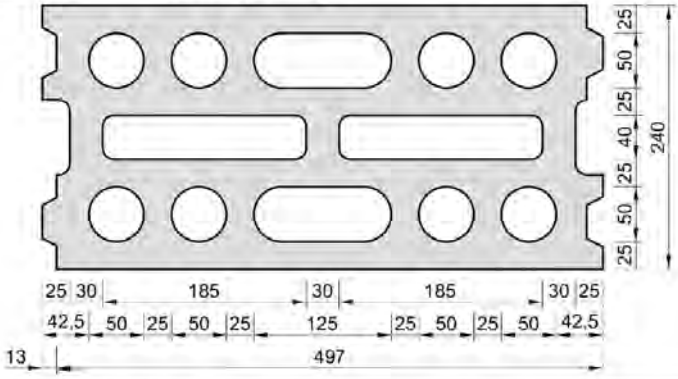


Table C173: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 5	≤ 5	≤ 2	≤ 5	≤ 5
Char. Edge distance (under fire conditions)	c_{cr}; ($c_{cr,fi}$)	[mm]	120 (2 h_{ef}) (for shear loads perpendicular to the free edge: c_{cr} = 250)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing (under fire conditions)	$s_{cr,\parallel}$; ($s_{cr,fi,\parallel}$)	[mm]	500 (4 h_{ef})						
	$s_{cr,\perp}$; ($s_{cr,fi,\perp}$)	[mm]	250 (4 h_{ef})						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	50						

Table C174: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	50	1,00		50	0,30		50	1,00
	120	1,00		250	1,00		120	1,00

Table C175: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	50	50	2,00		50	50	1,55
	120	500	2,00		120	250	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow light weight concrete brick HBL 16DF
Description of the stone, Installation parameters, Reductionfactors

Annex C 51

Brick type: Hollow light weight concrete brick HBL 16DF

Table C176: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		50	50	0,60		50	50	0,35
		120	50	2,00		120	50	1,15
		120	500	2,00		120	250	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\perp,V\,II}$
		50	50	1,30		50	50	1,00
		120	250	2,00				
		120	500	2,00		120	250	2,00

Table C177: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 3{,}1$ N/mm² [1]									
M8 / M10/ IG-M6	SH 16	≥ 85	1,2	1,2	0,9	1,2	1,2	0,9	2,0
M12 / IG-M8	SH 20	≥ 85	1,5	1,5	1,2	1,5	1,5	1,2	3,0
M16 / IG-M10	SH 20	≥ 85							5,0

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C172. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C178: Displacements

Anchor size	h_{ef}	δN / N	δN_0	δN_∞	δV / V	δV_0	δV_∞
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	$0{,}13 * N_{Rk} / 3{,}5$	$2 * \delta N_0$	0,55	$0{,}55 * V_{Rk} / 3{,}5$	$1{,}5 * \delta V_0$
M16	all				0,31	$0{,}31 * V_{Rk} / 3{,}5$	$1{,}5 * \delta V_0$

Table C179: Characteristic values of tension and shear load resistances under fire exposure

Anchor size	Perforated sleeve	Effecitve Anchorage depth	Characteristic Resistances $N_{Rk,b,fi} = N_{Rk,p,fi} = V_{Rk,b,fi}$			
		h_{ef}	R30	R60	R90	R120
		[mm]	[kN]			
M8 / M10 / IG-M6	SH 16	130	0,29	0,21	-1)	-1)
M12 / IG-M8	SH 20	≥ 130				
M16 / IG-M10	SH 20	≥ 130	0,29	0,21	0,12	-1)

1) no performance assessed

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry	**Annex C 52**
Performances hollow light weight concrete brick HBL 16DF Group factors, characteristic Resistances and Displacements	

Brick type: Hollow concrete brick Bloc Creux B40

Table C180: Stone description

Brick type		Hollow concrete brick Bloc Creux B40
Density	ρ [kg/dm³]	≥ 0,8
Normalised mean compressive strenght	f_b [N/mm²]	≥ 5,2
Conversion factor for lower compressive strengths		$(f_b / 5{,}2)^{0{,}5} \leq 1{,}0$
Code		EN 772-1
Producer (Country)		e.g. Leroux (FR)
Brick dimensions	[mm]	500 x 200 x 200
Drilling method		Rotary drilling

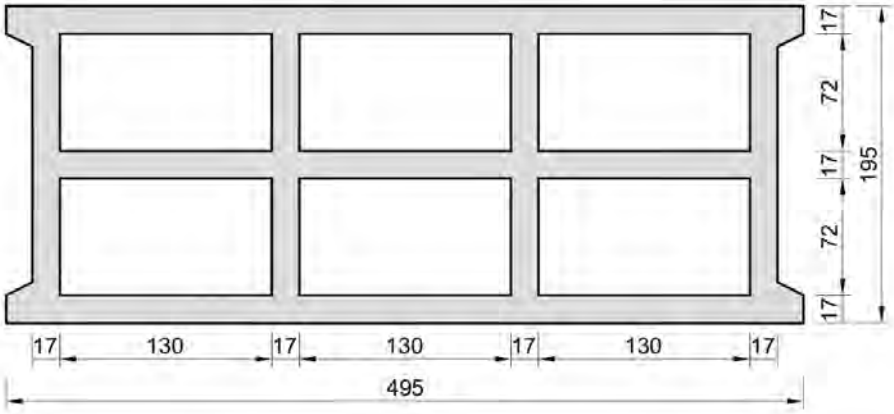


Table C181: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4	≤ 4
Char. Edge distance	c_{cr}	[mm]	120 (for shear loads perpendicular to the free edge: c_{cr} = 170)						
Minimum Edge Distance	c_{min}	[mm]	50						
Characteristic Spacing	$s_{cr,\,||}$	[mm]	170						
	$s_{cr,\,\perp}$	[mm]	200						
Minimum Spacing	$s_{min,\,||}$; $s_{min,\,\perp}$	[mm]	50						

Table C182: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,\,N}$		with c ≥	$\alpha_{edge,\,V\perp}$		with c ≥	$\alpha_{edge,\,V||}$
	50	1,00		50	0,35		50	1,00
	120	1,00		170	1,00		120	1,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow concrete brick Bloc Creux B40
Description of the stone, Installation parameters, Reductionfactors

Annex C 53

Brick type: Hollow concrete brick Bloc Creux B40

Table C183: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\,II,N}$		with c ≥	with s ≥	$\alpha_{g\,\perp,N}$
	50	50	1,50		50	50	1,40
	50	170	2,00		50	200	2,00
	120	170	2,00		120	200	2,00

Table C184: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\perp}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\perp}$
		50	50	0,55		50	50	0,35
		120	50	1,30		120	50	0,85
		120	170	2,00		120	200	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\,II,V\,II}$		with c ≥	with s ≥	$\alpha_{g\,\perp,V\,II}$
		50	50	1,10		50	50	1,00
		120	170	2,00		50	200	2,00
						120	200	2,00

Table C185: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with c ≥ c_{cr} and s ≥ s_{cr}						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2]			$N_{Rk,b} = N_{Rk,p}$ [2]			$V_{Rk,b}$ [2]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 5{,}2$ N/mm² [1]									
M8 / M10/ IG-M6	SH 16	130	2,0	1,5	1,2	2,0	1,5	1,2	6,0
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 130							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C180. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\perp}$ according to Annex C 3

Table C186: Displacements

Anchor size	h_{ef}	$\delta N / N$	$\delta N0$	$\delta N\infty$	$\delta V / V$	$\delta V0$	$\delta V\infty$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,13	$0{,}13 * N_{Rk} / 3{,}5$	$2 * \delta N0$	0,55	$0{,}55 * V_{Rk} / 3{,}5$	$1{,}5 * \delta V0$
M16	all				0,31	$0{,}31 * V_{Rk} / 3{,}5$	$1{,}5 * \delta V0$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances hollow concrete brick Bloc Creux B40
Group factors, characteristic Resistances and Displacements

Annex C 54

Brick type: Solid light weight concrete brick

Table C187: Stone description

Brick type		Solid light weight concrete brick
Density	ρ [kg/dm³]	≥ 0,6
Normalised mean compressive strenght	f_b [N/mm²]	≥ 2
Conversion factor for lower compressive strengths		$(f_b / 2)^{0.5} \leq 1,0$
Code		EN 771-3:2011+A1:2015
Producer (Country)		e.g. Bisotherm (DE)
Brick dimensions	[mm]	≥ 240 x 300 x 113
Drilling method		Rotary drilling

Table C188: Installation parameter

Anchor size		[-]	M8	M10	M12	M16	IG-M6	IG-M8	IG-M10
Installation torque	T_{inst}	[Nm]	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Char. Edge distance	c_{cr}	[mm]	150						
Minimum Edge Distance	c_{min}	[mm]	60						
Characteristic Spacing	$s_{cr,\parallel}$	[mm]	300						
	$s_{cr,\perp}$	[mm]	300						
Minimum Spacing	$s_{min,\parallel}$; $s_{min,\perp}$	[mm]	120						

Table C189: Reduction factors for single anchors at the edge

Tension load			Shear load					
			Perpendicular to the free edge			Parallel to the free edge		
	with c ≥	$\alpha_{edge,N}$		with c ≥	$\alpha_{edge,V\perp}$		with c ≥	$\alpha_{edge,V\parallel}$
	60	1,00		60	0,25		60	0,40
	150	1,00		150	1,00		100	1,00

Table C190: Factors for anchor groups under tension load

Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
	with c ≥	with s ≥	$\alpha_{g\parallel,N}$		with c ≥	with s ≥	$\alpha_{g\perp,N}$
	60	120	1,00		60	120	1,00
	150	300	2,00		150	300	2,00

Table C191: Factors for anchor groups under shear load

	Anchor position parallel to hor. joint				Anchor position perpendicular to hor. joint			
Shear load perpendicular to the free edge		with c ≥	with s ≥	$\alpha_{g\parallel,V\perp}$		with c ≥	with s ≥	$\alpha_{g\perp,V\perp}$
		60	120	0,25		60	120	0,25
		150	120	1,00		150	120	1,00
		150	300	2,00		150	300	2,00
Shear load parallel to the free edge		with c ≥	with s ≥	$\alpha_{g\parallel,V\parallel}$		with c ≥	with s ≥	$\alpha_{g\perp,V\parallel}$
		60	120	0,40		60	120	0,40
		100	120	1,00		100	120	1,00
		150	300	2,00		150	300	2,00

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances solid light weight concrete brick
Description of the stone, Installation parameters, Reduction- and Group factors

Annex C 55

Brick type: Solid light weight concrete brick

Table C192: Characteristic values of tension and shear load resistances

Anchor size	Perforated sleeve	Effective Anchorage depth	Characteristic Resistances with $c \geq c_{cr}$ and $s \geq s_{cr}$						
			Use condition						
			d/d			w/d w/w			d/d w/d w/w
			40°C/24°C	80°C/50°C	120°C/72°C	40°C/24°C	80°C/50°C	120°C/72°C	All temperature ranges
		h_{ef}	$N_{Rk,b} = N_{Rk,p}$ [2)]			$N_{Rk,b} = N_{Rk,p}$ [2)]			$V_{Rk,b}$ [2)]
		[mm]	[kN]						
Normalised mean compressive strength $f_b \geq 2$ N/mm² [1)]									
M8	-	80	3,0	2,5	2,0	2,5	2,0	1,5	3,0
M10 / IG-M6	-	90							
M12 / M16 / IG-M8 / IG-M10	-	100							
M8	SH 12	80	2,5	2,5	2,0	2,5	2,0	1,5	
M8 / M10/ IG-M6	SH 16	≥ 85							
M12 / M16 / IG-M8 / IG-M10	SH 20	≥ 85							

1) For lower compressive strengths resistances must be multiplied by the conversion factor according to Table C187. For stones with higher strengths, the shown values are valid without conversion.

2) $N_{Rk,b,c} = N_{Rk,p,c}$ and $V_{Rk,c\,II} = V_{Rk,c\,\perp}$ according to Annex C 3

Table C193: Displacements

Anchor size	h_{ef}	δ_N / N	δ_{N0}	$\delta_{N\infty}$	δ_V / V	δ_{V0}	$\delta_{V\infty}$
	[mm]	[mm/kN]	[mm]	[mm]	[mm/kN]	[mm]	[mm]
M8 – M12 / IG-M6 – M10	all	0,1	$0,1*N_{Rk} / 3,5$	$2*\delta_{N0}$	0,3	$0,3*V_{Rk} / 3,5$	$1,5*\delta_{V0}$
M16	all				0,1	$0,1*V_{Rk} / 3,5$	$1,5*\delta_{V0}$

Injection system EJOT Multifix Vinylester / Sormat ITH Vinylester for masonry

Performances solid light weight concrete brick
Characteristic Resistances and Displacements

Annex C 56