

Upat UPM 44



CE

ETA-02/0022,
Option 1 for cracked concrete



CE

ETA-10/0388,
for post-installed rebar connection



CE

ETA-15/0555, for masonry use
categories b, c or d and d/d or w/w



ÉMISSIONS DANS L'AIR INTÉRIEUR



Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions).

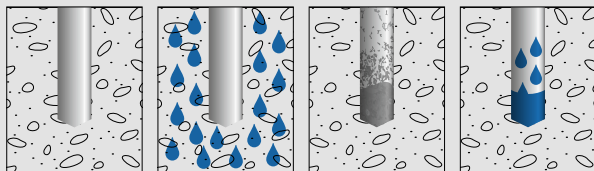


Upat.

Upat UPM 44



DE	Gebrauchsanweisung	HR	Upute za instalaciju	DE	Trockener Beton	Nasser Beton	Verschmutztes Bohrloch	Wassergefülltes Bohrloch
EN	Operating instructions	SR	Uputstvo za instalaciju	EN	Dry concrete	Water saturated concrete	Contaminated drill hole	Water filled borehole
FR	Mode d'emploi	TR	Kurulum talimatları	FR	Béton sec	Béton humide	Perçage non dépolssiéré	Trou inondé
NL	Montagehandleiding	EL	Οδηγίες Εγκατάστασης	NL	Droog beton	Met water verzadigd beton	Vervuild boorgat	Met water gevuld boorgat
IT	Istruzioni per l'installazione	BG	Инструкции за инсталиране	IT	Calcestruzzo secco	Calcestruzzo saturo d'acqua	Foro sporco	Foro pieno d'acqua nel calcestruzzo
ES	Instrucciones de uso	RU	Инструкция по установке	ES	Hormigón seco	Hormigón saturado de agua	Agujero de taladrado sucio	Taladro lleno de agua en hormigón
PT	Instruções de utilização	UK	Інструкція з використання	PT	Betão seco	Betão saturado de água	Furo com sujidade	Furo cheio de água
DA	Installationsvejledning	KK	Қолдану нұсқаулығы	DA	Tør beton	Vandmættet beton	Tilsmudset borehul	Vandfyldt borehul
SV	Installationsinstruktioner	ZH	使用说明书	SV	Torr betong	Vattenmättad betong	Smutsigt hål	Vattenfyllt hål
NO	Installasjonsveiledning	JA	取扱説明書	NO	Tørr betong	Vannmettet betong	Tilskitnet borehull	Vannfylte borehull
FI	Asennusohjeet	KO	사용 설명서	FI	Kuiva betony	Veden kyllästämä betoni	Likaantunut poranreikä	Vedellä täyttynyt porareikä
IS	Notkunarlaiðbeiningar	HI	Panduan Penggunaan	IS	Purr steinsteypa	Blaut steinsteypa	Óhreinn borhola	Vatnsfyllt borhola
ET	Kasutusjuhend	AR	تعليمات الاستخدام	ET	Kuivbetoon	Märgbetoon	Mustunud puuri auk	Veega täidetud puuri auk
LV	Lietošanas instrukcija			LV	Sauss betons	Mitrš betons	Piesārņots urbums	Urbums ar ūdeni
LT	Naudojimo instrukcija			LT	Sausas betonas	Drėgnas betonas	Užteršta išgręžta skylė	Vandens pripildyta išgręžta skylė
PL	Instrukcja instalacji			PL	Beton suchy wodą	Beton nasycony wodą	Zabrudzony wywiercony otwór	Wywiercony otwór wypełniony
CS	Návod k instalaci			CS	Suchý beton	Mokrý beton otvory vyvrtané do	Znečištěný vývrt	Naplňené vodou
SK	Návod na používanie			SK	Suchý betón	Vodou nasýtený betón	Znečistený vývrt	Vodou naplnený otvor vyvrtaný
HU	Szerelési útmutató			HU	Száraz beton	Nedves beton	Szennyezett furat	Vízzel töltött furat
RO	Instrucțiuni de utilizare			RO	Beton uscat	Beton ud	Gaură forată contaminată	Gaură forată umplută cu apă
SL	Navodila za namestitve			SL	Suh beton	Moker beton	Umazana izvrtina	Z vodo napolnjena izvrtina



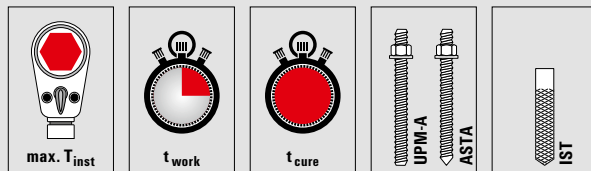
HR	Suhi beton	Mokri beton	Zaprljani provrt	Vodom napunjen provrt
SR	Suv beton	Mokar beton	Zaprljani provrt	Provrt napunjen vodom
TR	Kuru beton	Yaş beton	Kirli delik	Su dolu delik
EL	Στεγνό μπετόν	Υγρό μπετόν	Βρώμικη τρύπα	Τρύπα γεμάτη νερό
BG	Сух бетон	Мокър бетон	Замърсен отвор	Пълен с вода отвор
RU	Сухой бетон	Водонасыщенный бетон	Загрязненное отверстие	Отверстие в бетоне, заполненное водой
UK	Сухий бетон	Водонасичений бетон	Забруднений отвір	Заповнений водою отвір
KK	Құрғақ бетон	Ылғалды бетон	Ластанған саңылау	Сүмен толтырылған саңылау
ZH	干燥混凝土	湿混凝土	受污的钻孔	注水的钻孔
JA	いたベトン	湿ったベトン	汚れた掘削孔	水がたまった掘削孔
KO	건조 콘크리트	습윤 콘크리트	이물질이 삽입된 드릴 구멍	물이 찬 드릴 구멍
HI	Beton kering	Beton basah	Lubang bor terkontaminasi	Lubang bor terisi air
AR	خرسانة جافة	خرسانة رطبة	ثقب ملوث	ثقب ممتلئ بالماء



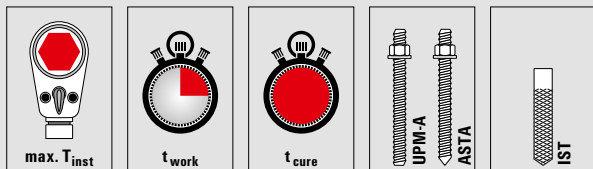
DE	Gerissener Beton	Ungerissener Beton	Bewehrungsanschluss	Vollstein	Lochstein	Porenbeton
EN	Cracked concrete	Non-cracked concrete	Reinforcement connection	Solid brick	Perforated brick	Aerated concrete
FR	Béton fissuré	Béton non fissuré	Scellement d'armatures	Maçonneries pleines	Maçonneries creuses	Béton cellulaire
NL	Gescheurd beton	Ongescheurd beton	Wapeningsaansluiting	Volle steen	Holle steen	Cellenbeton
IT	Calcestruzzo fessurato	Calcestruzzo non fessurato	Ferri di ripresa	Mattone pieno	Mattone forato	Calcestruzzo cellulare autoclavato
ES	Hormigón agrietado	Hormigón sin grietas	Conexión de refuerzo	Ladrillo macizo	Ladrillo perforado	Hormigón celular
PT	Betão fissurado	Betão não fissurado	Conetor de reforço	Pedra maciça	Pedra porosa	Betão celular
DA	Revnet beton	Ikkerevnet beton	Armeringstilslutninger	Massiv sten	Hulsten	Porebeton
SV	Sprucken betong	Ej sprucken betong	Armeringsanslutning	Massiv sten	Hålsten	Lättbetong
NO	Betong med riss	Betong uten riss	Armeringsforbindelse	Helstein	Perforert (mur) stein	Porebetong
FI	Haljennut betoni	Halkeamaton betoni	Vahvistusliitintä	Umpitiili	Reikätiili	Solubetoni
IS	Sprungin steypa	Óbrotin steinsteypa	Tenging við styrkingu	Gegnheill steinn	Holusteinn	Loftfylltur steinn
ET	Pragunenud betoon	Pragudeta betoon	Sarrusühendus	Täistellis	Õonestellis	Poorbetoon
LV	Betons ar plaisām	Betons bez plaisām	Stiegrojuma savienojums	Masivs ķieģelis	Dobķieģelis	Gāzbetons
LT	Sutrukinėjęs betonas	Vientisas betonas	Armaturės sujungimo elementas	Plinavidurė plyta	Plyta su kiurymėmis	Porėtasis betonas
PL	Beton spękany	Beton niespękany	Złącze zbrojarskie	Cegła pełna	Pustak	Beton porowaty
CS	Beton s trhlinami	Beton bez trhlin	Připojka výztuže	Plně cihly	Děrované cihly	Pórbeton
SK	Betón s trhlinami	Betón bez trhlin	Styková výstuž	Plná tehla	Dierovaná tehla	Pórbetón
HU	Repedéses beton	Repedésmentes beton	Betonvasalatsatlakozás	Tömör kő	Lyukaskő	Porózus beton
RO	Beton fisurat	Beton fără fisuri	Racord de armătură	Cărămidă plină	Cărămidă cu găuri	Beton poros
SL	Razpokan beton	Nerazpokan beton	Priključek za armaturo	Polna opeka	Votla opeka	Porozni beton



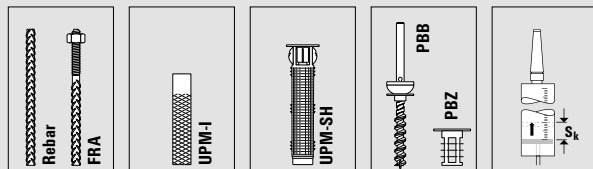
HR	Ispucani beton	Neispucani beton	Priključak armature	Puni kamen	Šupljikavi kamen	Porobeton
SR	Ispucao beton	Neispucao beton	Priključak armature	Puni kamen	Šupljikavi kamen	Porobeton
TR	Çatlamış beton	Çatlamamış beton	Destek bağıntısı	Dolu tuğla	Delikli tuğla	Gözenekli beton
EL	Μπετόν με ρωγμές	Μπετόν χωρίς ρωγμές	Σύνδεση οπλισμού	Συμπαιείς πλίνθοι	Διάτρητοι πλίνθοι	Πορώδες μπετόν
BG	Напукан бетон	Ненапукан бетон	Връзка за армировка	Плътен камък	Порест камък	Газобетон
RU	Треснутый бетон	Цельный бетон	Соединитель армирования	Полнотельный кирпич	Пустотельный кирпич	Пористый бетон
UK	Тріснутий бетон	Бетон у зоні стиснення	Арматурне пруття	Бетон щільної структури	Бетон порожнистої структури	Газобетон
KK	Жарықтары бар бетон	Бүтін бетон	Арматуралау қосылымы	Көлемді блок	Қуыс кірпіш	Кеуек бетон
ZH	有裂缝的混凝土	无裂缝的混凝土	钢筋连接件	实心砖	空心砖	多孔混凝土
JA	ひび割れがあるベトン	ひび割れないベトン	強化コネクタ	全面石材	穴付き石材	気泡コンクリート
KO	균열 콘크리트	비균열 콘크리트	보강재 연결	일반 벽돌	공동 벽돌	기포 콘크리트
HI	Beton retak	Beton tidak licin	Sambungan penguat	Batu bata penuh	Batu bata berlubang	Batu bata berpori
AR	خرسانة متصدعة	خرسانة غير متصدعة	وصلة حديد مسلح	طوبه كاملة	طوبه مخرمة	خرسانة ذات مسامح



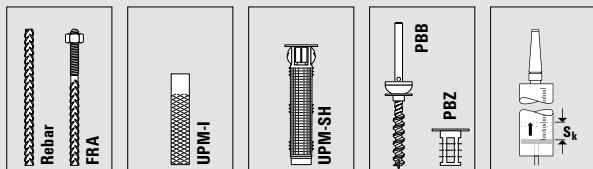
DE	Drehmoment	Verarbeitungszeit	Aushärtezeit	Ankerstangen	Innengewindeanker
EN	Required torque	Open time	Hardening time	Anchor rods	Internal thread anchors
FR	Couple	Temps de manipulation	Temps de durcissement	Tiges filetées	Douilles taraudées
NL	Draaimoment	Verwerkingstijd	Uithardtijd	Ankerstangen	Binnendraadanker
IT	Coppia	Tempo di lavorazione	Tempo di indurimento	Barre di ancoraggio	Ancoraggio con filettatura interna
ES	Par	Tiempo de tratamiento	Tiempo de endurecimiento	Barras de anclaje	Anclaje de rosca interior
PT	Binário	Tempo de processamento	Tempo de endurecimento	Tirantes de ancoragem	Ancoragem de rosca interna
DA	Tilspændingsmoment	Forarbejdsningstid	Hærdetid	Gevindstænger	Anker med indvendigt gevind
SV	Vridmoment	Bearbetningstid	Hårdningstid	Förankringsstänger	Ankare med innergånga
NO	Dreiemoment	Bearbeidelsestid	Herdetid	Ankerstenger	Innvendig gjengeanker
FI	Vääntömomentti	Käsittelyaika	Kovettumisaika	Harustangot	Sisäkiekierreankkuri
IS	Snúningisáttak	Vinnslutími	Þornunartími	Festistangir	Festing með skrifgangi að innanverðri
ET	Pöördemoment	Töötlemisaeg	Kõvastumisaeg	Ankurvarded	Sisekeermeega ankur
LV	Griezies moments	Apstrādājamības laiks	Sacietēšanas laiks	Enkura stienis	Iekšējās vītnes enkurs
LT	Sukimo momentas	Darbo su medžiaga laikas	Kietėjimo laikas	Inkariniai strypai	Strypas su vidiniu sriegiu
PL	Moment dokręcenia	Czas zelowania	Czas wiązania	Kotwy	Kotwy z gwintem wewnętrznym
CS	Utahovací moment	Doba zpracování	Doba vytvrzení	Kotevní tyče	Svorník s vnitřním závitem
SK	Uťahovací moment	Doba spracovania	Doba vytvrdnutia	Kotviace tyče	Kotva s vnútorným závitom
HU	Forgatónyomaték	Feldolgozási idő	Kikeményedési idő	Horgonyrudak	Belsőmenetes horgony
RO	Cuplu	Timp de punere in operă	Timp de întărire	Bare de ancorare	Ancoră cu filet interior
SL	Navor	Čas obdelave	Čas strjevanja	Sidra	Sidro z notranjim navojem



HR	Okretni moment	Vrijeme obrade	Vrijeme stvrdnjavanja	Sidrene šipke	Sidro s unutrašnjim navojem
SR	Obrtni moment	Vreme obrade	Vreme otvrdnjavanja	Šipke za ankerovanje	Kotva s unutrašnjim navojem
TR	Tork	Kullanma süresi	Sertleşme süresi	Dübel çubukları	İçten dışı dübel
EL	Ροπή σύφιξης	Χρόνος επεξεργασίας	Χρόνος σκλήρυνσης	Ντιζες αγκύρωσης	Αγκύριο εσωτερικού σπειρώματος
BG	Въртящ момент	Време за обработка	Време за втвърдяване	Анкерни пръти	Анкерен болт с вътрешна резба
RU	Крутящий момент	Время обработки	Время отверждения	Анкерные болты	Анкеры с внутренней резьбой
UK	Кругний момент	Час обробки	Час затвердіння	Анкерні шпильки	Анкер із внутрішнім різьбленням
KK	Айналдыру моменті	Өңделу уақыты	Қатаю уақыты	Анкерлік болттары	Ішкі бұрандасы бар анкерлер
ZH	扭矩	加工时间	硬化时间	系杆	内部螺纹系杆
JA	トルク	加工時間	凝固時間	アンカーロード	めねじアンカー
KO	토크	작업 시간	경화 시간	앵커 로드	내부 스레드 앵커
HI	Torsi	Waktu pemrosesan	Waktu pengerasan	Batang jangkar	Jangkar berulir dalam
AR	عزم الدوران	وقت التصنيع	وقت التصليب	قضبان تثبيت	لولة تثبيت داخلية



DE	Bewehrungsstab Bewehrungsanker	Innengewinde- anker	Ankerhülse Kunststoff	Konusbohrer, Zentriertülle	Skalenteile
EN	Reinforcement rod Reinforcement anchor	Internal thread anchor	Plastic anchor sleeve	Cone drill, centring sleeve	Scale divisions
FR	Barres d'armatures Ancre d'armature	Douilles taraudées	Tamis d'injection	Foret à rotule, douille de centrage	Graduations
NL	Wapeningsstaaf Wapeningsanker	Binnendraadanker	Ankerhuls kunststof	Conusboor, Centreerhuls	Schaalonderdelen
IT	Ferro di ripresa Ancoraggio di ripresa	Ancoraggio con filettatura interna	Boccola di ancoraggio in plastica	Punta conica, boccola di centraggio	Divisioni di scala
ES	Barra de refuerzo Anclaje de refuerzo	Anclaje de rosca interior	Vaina de anclaje plástica	Broca cónica, boquilla para centrado	Unidades de escala
PT	Barra de armação Ancoragem de reforço	Ancoragem de rosca interna	Manga de ancoragem em plástico	Broca cónica, Manga de centragem	Intervalos de gradação
DA	Armeringsstav Armeringsanker	Anker med indvendigt gevind	Sihylse kunststof	Konusbor, centreringshylse	Skalatrín
SV	Armeringsjärn Armeringsankare	Ankare med innergånge	Ankarhylsa plast	Koniskt borr, centreringshylsa	Skaldelar
NO	Wapeningsstaaf Wapeningsanker	Innvendig gjenge anker	Ankerhylse kunststoff	Konusbor, sentreringsstykke	Skaladeler
FI	Tartuntateräs Tartuntaankkuri	Sisäkierreankkuri	Muovinen ankkurihylsy	Kartiopora, keskitysholkki	Asteikkojaot
IS	Styrktarteinn Styrktarfesting	Festing með skrufgangi að innanverðu	Festihúlsa gerviefni	Kónískur bor, miðstýringarkápa	Mæliskvarði
ET	Sarrusvarras Sarrusankur	Sisekeermega ankur	Ankurhüüls plast	Koonuspuur, Tsentreerimisümbris	Skaala jaotused
LV	Enkura stiegrojuma Stienis	Iekšējās vītnes enkurs	Plastmasas enkura uzmava	Koniskais urbis, centrēšanas uzmava	Skalas iedaļas
LT	Armaturinis strypas, Armaturinis inkaras	Inkaras su vidiniu sriegiu	Plastikinė inkarinė įvorė	Kūginis grąžtas, centravimo įvorė	Skalės padalos
PL	Pręt zbrojarski Kotwa zbrojarska	Kotwa z gwintem wewnętrznym	Tuleja kotwiąca syntetyczna	Wiertło stożkowe, tulejka centrująca	Podziałki skali
CS	Výztužná tyč Kotva výztuže	Svorník s vnitřním závitem	Kotevní pouzdro plast	Kuželový vrták, středící pouzdro	Díly na stupnici
SK	Výstužný prút Vystužovacia kotva	Kotva s vnútorným závitom	Puzdro z plastu	Kuželový vrták, centrovacie hrdo	Diely na stupnici
HU	Betonvas rúd Horgonyzó vas	Belsőmenetes horgony	Műanyag horgonyhüvely	Kúpíró, központozó persely	Skálarészértekek
RO	Tijă de armătură Ancoră de armătură	Ancoră cu filet interior	Manșon de ancoră material plastic	Căuritor conic, inel de centrare	Diviziuni scală



SL	Armatura palica Sidro armature	Sidro s notranjim navojem	Plastični sidrni vložek	Konusni sveder, centrinski tulec	Razdelki na skali
HR	Armatura šipka Armaturno sidro	Sidro s unutrašnjim navojem	Plastična košuljica sidra	Konusno svrdlo, kšuljica za centriranje	Dijelovi skale
SR	Armatura šipka Armatura kotva	Kotva sa unutrašnjim navojem	Plastična košuljica kotve	Konusna burgija, košuljica za centriranje	Delovi skale
TR	Takviye çubuğu Takviye demiri	İçten dışlı dübel	Plastik dübel kovani	Konik matkap ucu, Merkezleme kilavuzu	Kadran bölümleri
EL	Ράβδος οπλισμού Αγκύριο οπλισμού	Αγκύρια με εσωτερικό σπείρωμα	Πλαστικά βύσματα αγκύρωσης	Κωνικό τρυπάνι, περιβλήμα κεντραρίσματος	Διαβαθμίσεις κλίμακας
BG	Армировъчен прът Армировъчен анкерен болт	Анкерен болт с вътрешна резба	Анкерна втулка пластмаса	Конусно свердрло, центрираща приставка	Части на скалата
RU	Арматурный стержень Арматурный анкер	Анкер с внутренней резьбой	Анкерная гильза пластиковая	Конусное сверло, центрирующий футляр	Деление шкалы
UK	Арматурний стрижень Арматурний анкер	Анкер із внутрішнім різьбленням	Анкерна гільза Полімерний матеріал	Конусне свердрло, Центрувальна втулка	Поділки шкали
KK	Арматуралық өзек арматуралық анкері	ішкі бурандасы бар анкерлер	Анкерлік төлке, пластмассасы	конустық бұрғысы, ортаға дәл келтіру ұшы	Шәкіл бөліктері
ZH	钢筋 钢筋锚杆	型内螺纹 锚栓	型塑料 螺丝套管	锥形钻头, 定心套筒	刻度
JA	鉄筋 強化アンカー	内ねじ付きアンカー	プラスチック製アンカースリーブ	テーパードリル、センタリングスリーブ	目盛り分割
KO	보강 로드 보강 앵커	내부 스레드 앵커	앵커 슬리브 플라스틱	원추형 드릴, 센터링 케이스	스케일의 눈금폭
HI	Batang penguat Jangkar penguat	Jangkar berulir dalam	Selongsong jangkar plastik	Bor kerucut, Nosel pusat	Bagian skala
AR	قضيب حديد مسلح تثبيت حديد مسلح	لولية تثبيت داخلية	كُم تثبيت بلاستيكي	أجزاء المقياس مثقب مخروطي، كُم المركز	

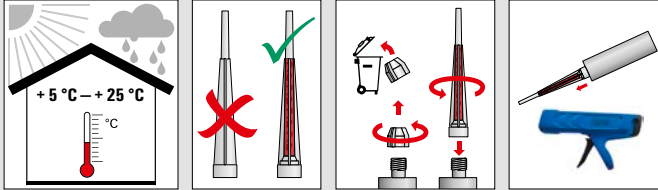


	 CE ETA-02/0022, EAD 330499-01-0601, Option 1 for cracked concrete	 UPM-A / ASTA	13 / 16 / 17
	 CE ETA-02/0022, EAD 330499-01-0601, Option 1 for non-cracked concrete	 IST	14 / 18
	 CE ETA-02/0022, EAD 330499-01-0601, Option 1 for cracked concrete	 Rebar / FRA	15 / 16 / 17
	 CE ETA-15/0555, ETAG 029, masonry use categories h, c or d	 UPM-A / ASTA	19 / 21 / 22
	 CE ETA-15/0555, ETAG 029, masonry use categories h, c or d	 UPM-I	20 / 21 / 23
	 CE ETA-15/0555, ETAG 029, masonry use categories h, c or d	 UPM-SH+ UPM-A / ASTA	24 / 25 / 27
	 CE ETA-15/0555, ETAG 029, masonry use categories h, c or d	 UPM-SH+ UPM-I	26 / 27
	 CE ETA-15/0555, ETAG 029, masonry use categories h, c or d	 PBB / UPM-A / ASTA	30 / 32
	 CE ETA-15/0555, ETAG 029, masonry use categories h, c or d	 PBB / UPM-I	31 / 32



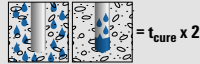
STOP 11/2026

OK?

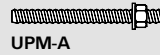


Upat MR Plus
(≤ 410 ml)

Temperature Range (°C)	t _{work}			t _{cure}		
	UPM 44 Relax	UPM 44 (standard)	UPM 44 Express	UPM 44 Relax	UPM 44 (standard)	UPM 44 Express
-10 °C - -5 °C	-	-	-	-	-	12 h
> -5 °C - ±0 °C	-	-	5 min.	-	24 h	3 h
> ±0 °C - +5 °C	-	13 min.	5 min.	6 h	3 h	3 h
> +5 °C - +10 °C	20 min.	9 min.	3 min.	3 h	90 min.	50 min.
> +10 °C - +20 °C	10 min.	5 min.	1 min.	2 h	60 min.	30 min.
> +20 °C - +30 °C	6 min.	4 min.	-	60 min.	45 min.	-
> +30 °C - +40 °C	4 min.	2 min.	-	30 min.	35 min.	-



Volume	Product	Art. No.	Application Method
150 ml	UPM DM P	570073	
300 ml			
345 ml	UPM AM	512604	
360 ml			



UPM-A



ASTA



UPM-A, ASTA



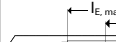


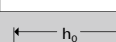


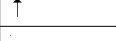
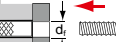

Rebar Type	M6	M8	M10	M12	M16	M20	M24	M27	M30
M	-	✓	✓	✓	✓	✓	✓	✓	✓
M	✓	✓	✓	✓	✓	✓	✓	✓	✓
d _o	8	10	12	14	18	24	28	30	35
h _o	50	60	60	70	80	90	96	108	120
h _{o,max}	72	160	200	240	320	400	480	540	600
UP BS	Ø 8	Ø 10	Ø 12	Ø 14	Ø 18	Ø 24	Ø 28	Ø 35	Ø 35
d _b	9	11	14	16	20	26	30	40	40
d _f	7	9	12	14	18	22	26	30	33
d _f	9	12	14	16	20	26	30	33	40
Sk (h _{o,min})	2	2	3	3	5	11	15	18	28
Sk (h _{o,max})	2	5	7	10	19	48	75	80	130
max. T _{inst}	5	10	20	40	60	120	150	200	300



IST

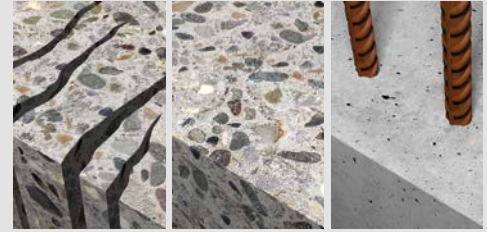


IST







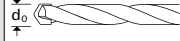
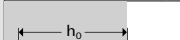

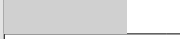


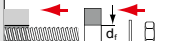

	M5	M6	M8	M10	M12	M16	M20
 ETA-02/0022, EAD 330499-01-0001, Option 1 for non-cracked concrete	-	-	✓	✓	✓	✓	✓
 $l_{E, \max}$, $l_{E, \min}$	8	8	8	10	12	16	20
 $l_{E, \max}$	14	16	18	23	26	35	45
 d_o	10	12	14	18	20	24	32
 h_o	75	75	90	90	125	160	200
 UP BS d_b	Ø 10	Ø 12	Ø 14	Ø 18	Ø 20	Ø 24	Ø 35
 d_b	11	14	16	20	25	26	40
 d_f	6	7	9	12	14	18	22
 Sk [-] S_k	2	3	5	7	11	17	48
 $\max. T_{inst}$ [Nm]	-	-	10	20	40	80	120

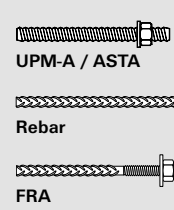
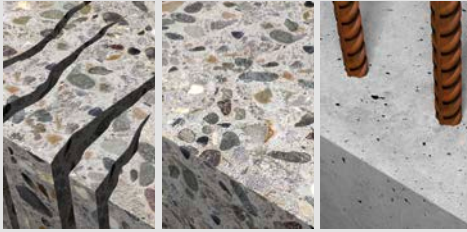
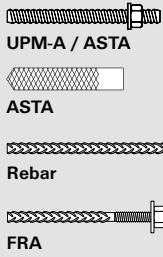
Rebar

FRA

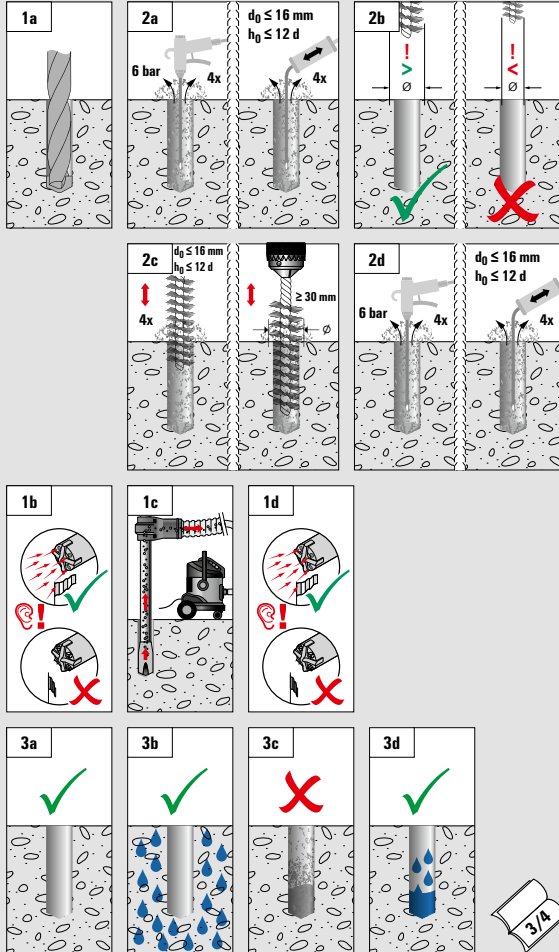


Rebar, FRA

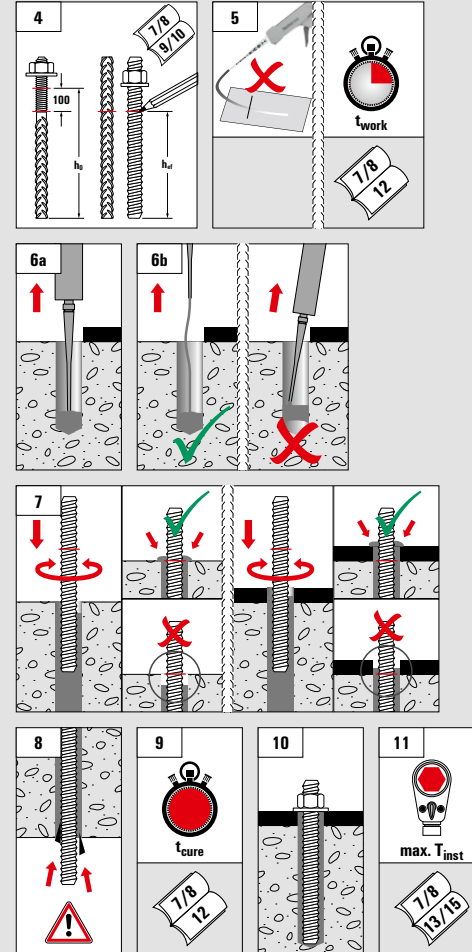
	Rebar	8	10	12	14	16	20	25	28	
	FRA	-	-	M12	-	M16	M20	M24	-	
 ETA-02/0022, EAD 330499-01-0001, Option 1 for cracked concrete	Rebar	-	✓	✓	✓	✓	✓	✓	✓	
 ETA-02/0022, EAD 330499-01-0001, Option 1 for non-cracked concrete	Rebar	✓	✓	✓	✓	✓	✓	✓	✓	
	FRA	-	-	✓	-	✓	✓	✓	-	
 d_o	d_o [mm]	12	14	16	18	20	25	30	35	
 h_o	$h_{o, \min}$ [mm] Rebar	60	60	70	75	80	90	100	112	
	FRA	170	180	190	196	320	400	500	560	
	$h_{o, \max}$ [mm] Rebar	160	200	240	280	320	400	500	560	
	FRA	240	320	400	480					
 UP BS d_b	UP BS d_b [mm]	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20	Ø 25	Ø 35	Ø 35	
 d_f	d_f [mm]	14	16	20	20	25	27	40	40	
 d_f	d_f [mm]	FRA	-	-	14	-	18	22	26	-
 d_f	d_f [mm]	FRA	-	-	18	-	22	26	32	-
 Sk ($h_{o, \min}$) [-] Rebar	Sk ($h_{o, \min}$) [-] Rebar	3	3	4	5	6	10	13	24	
	FRA	-	-	10	-	14	22	26	-	
 Sk ($h_{o, \max}$) [-] Rebar	Sk ($h_{o, \max}$) [-] Rebar	7	10	14	18	24	45	65	116	
	FRA	-	-	14	-	24	45	63	-	
 $\max. T_{inst}$ [Nm]	$\max. T_{inst}$ [Nm]	FRA	-	-	40	-	60	120	150	-



UPM-A / ASTA, IST, Rebar, FRA



UPM-A / ASTA, Rebar, FRA

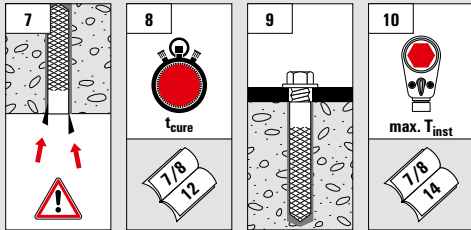
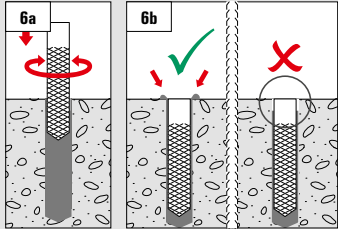
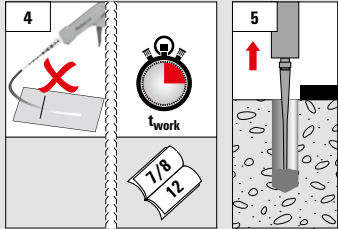




IST





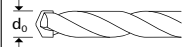
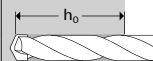

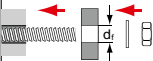
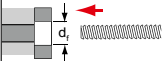
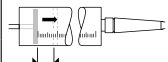

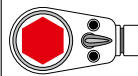


IST



UPM-A / ASTA



UPM-A / ASTA

 UPM-A / ASTA	M6	M8	M10	M12	M16
 ETA-15/0555, ETAG 029, masonry use categories b, c or d	✓	✓	✓	✓	✓
 d_0 (mm)	8	10	12	14	18
 h_0	$h_{0,min}$ (mm)				
	$h_{0,max}$ (mm)				
 UP BS	Ø 8	Ø 10	Ø 12	Ø 14	Ø 18
	d_b (mm)	9	11	14	16
 d_f (mm)	7	9	12	14	18
	 d_f (mm)	9	11	14	16
 S_k ($h_{0,min}$) [-]		2	2	2	3
	 S_k ($h_{0,max}$) [-]	3	3	4	5
 max. T_{inst} [Nm]	 www.upat.com → ETA-15/0555 				



UPM-I





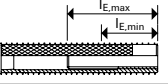
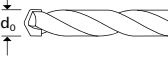
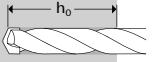

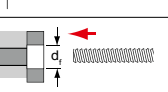
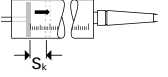
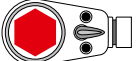


UPM-A / ASTA



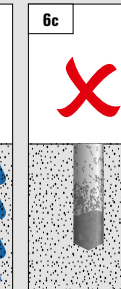
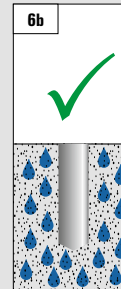
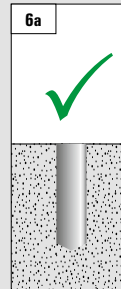
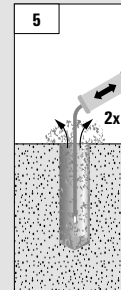
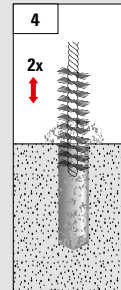
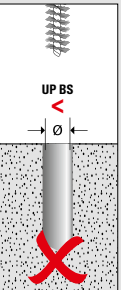
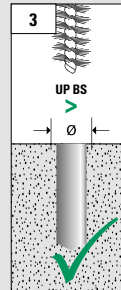
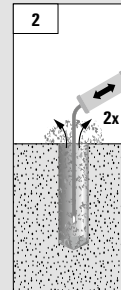
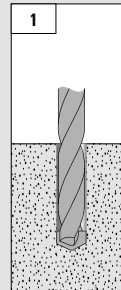
UPM-I

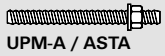


UPM-I

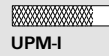
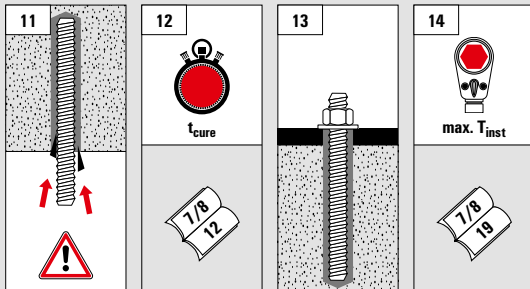
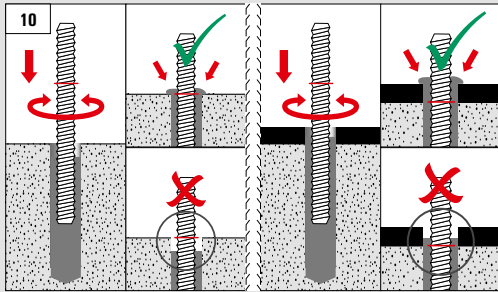
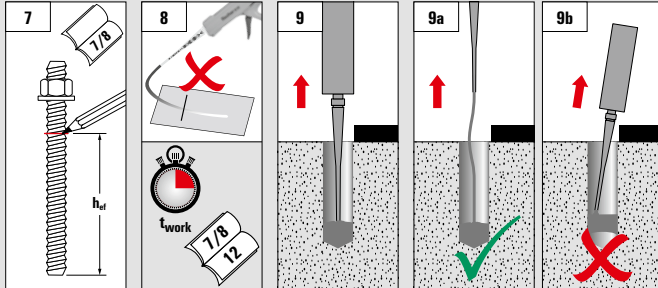
 UPM-I	M6	M8	M10	M12
 CE ETA-15/0555, ETAG 029, masonry use categories b, c or d	✓	✓	✓	✓
 $l_{E,max}$ $l_{E,min}$	$l_{E,min}$ 6	8	10	12
	$l_{E,max}$ 60	60	60	60
 d_o	d_o [mm] 14	14	18	18
 h_o	h_o [mm] 85	85	85	85
 UP BS	\emptyset 14	\emptyset 14	\emptyset 18	\emptyset 18
	d_o [mm] 16	16	20	20
 d_f	d_f [mm] 7	9	12	14
 S_k	Sk [-] 4	4	5	5
 max. T_{inst} [Nm]			www.upat.com → ETA-15/0555	
	 CE ETA-15/0555, ETAG 029, masonry use categories b, c or d			

UPM-A / ASTA, UPM-I

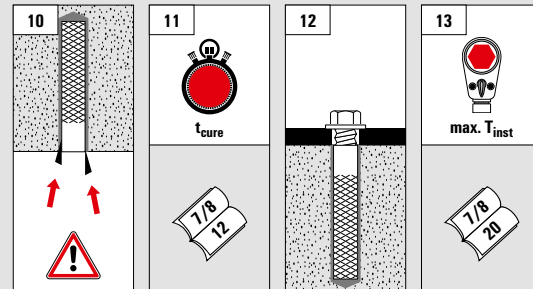
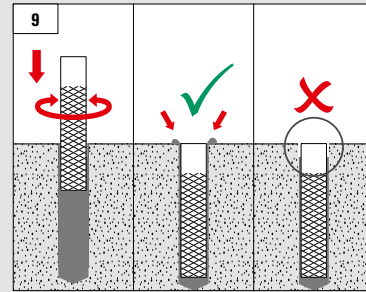
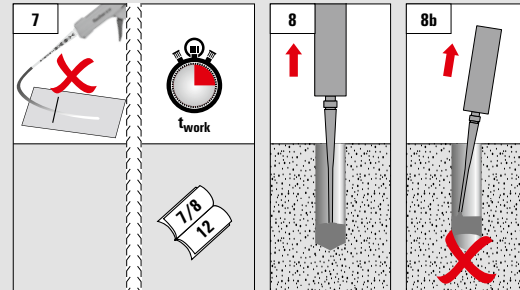




UPM-A / ASTA



UPM-I





UPM-A / ASTA



UPM-SH







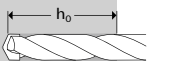


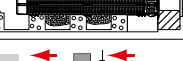
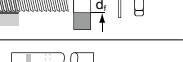




UPM-A / ASTA







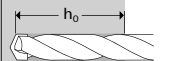


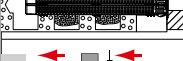
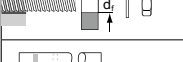




UPM-SH

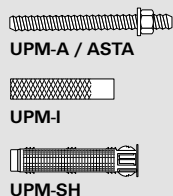
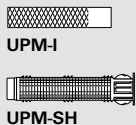


UPM-A / ASTA

 UPM-A / ASTA  UPM-SH	M6		M8				M10	
	12x50	12x85	12x50	12x85	16x85	16x130	16x85	16x130
 ETA-15/0555, ETAG 029, masonry use categories b, c or d	✓	✓	✓	✓	✓	✓	✓	✓
 d_0 [mm]	12	12	12	12	16	16	16	16
 h_0 [mm]	55	90	55	90	90	135	90	135
 UP BS d_b [mm]	Ø 12	Ø 12	Ø 12	Ø 12	Ø 16	Ø 16	Ø 16	Ø 16
 d_b [mm]	14	14	14	14	20	20	20	20
 t_{tol} [mm]	0	20	0	20	0	20	0	20
 d_f [mm]	7	7	9	9	9	9	12	12
 Sk [-]	5	10	5	10	12	15	12	15
 max. T_{inst} [Nm]			www.upat.com → ETA-15/0555 					

UPM-A / ASTA

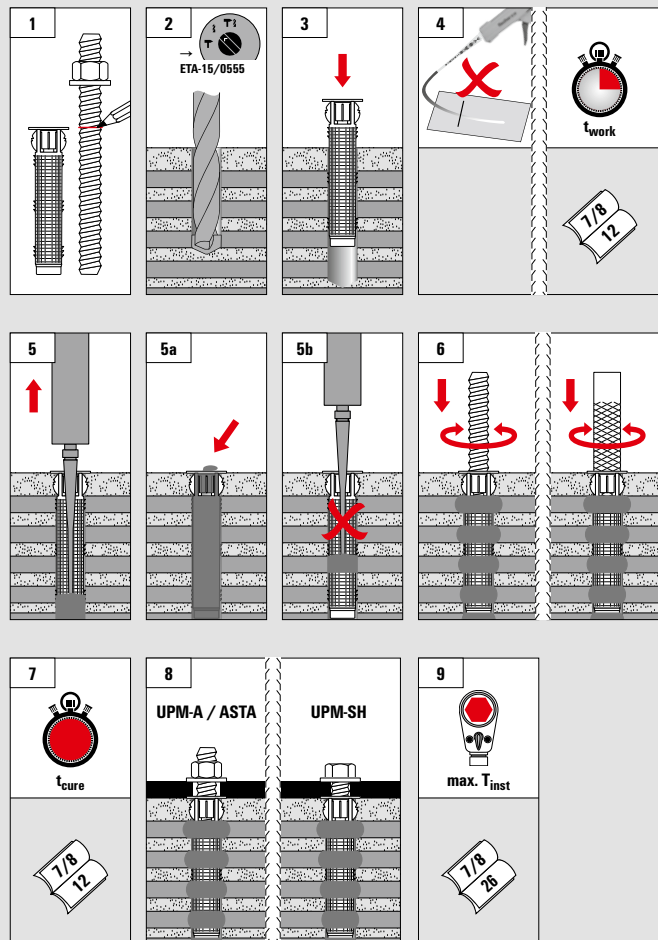
 UPM-A / ASTA  UPM-SH	M12			M16		
	20x85	20x130	20x200	20x85	20x130	20x200
 ETA-15/0555, ETAG 029, masonry use categories b, c or d	✓	✓	✓	✓	✓	✓
 d_0 [mm]	20	20	20	20	20	20
 h_0 [mm]	90	135	205	90	135	205
 UP BS d_b [mm]	Ø 20	Ø 20	Ø 20	Ø 20	Ø 20	Ø 20
 d_b [mm]	25	25	25	25	25	25
 t_{tol} [mm]	0	20	20	0	20	20
 d_f [mm]	14	14	14	18	18	18
 Sk [-]	15	25	40	15	25	40
 max. T_{inst} [Nm]				www.upat.com → ETA-15/0555 		

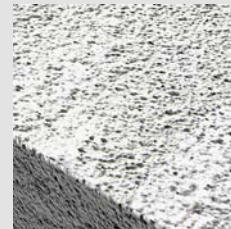
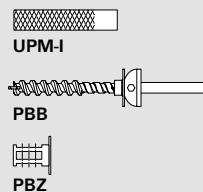
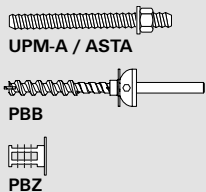


UPM-I






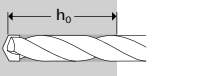
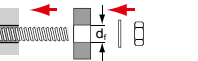
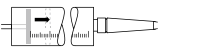


	UPM-I	M6	M8	M10	M12
	UPM-SH	16x85	16x85	20x85	20x85
		✓	✓	✓	✓
	$l_{E,min}$	6	8	10	12
	$l_{E,max}$	60	60	60	60
	d_0 [mm]	16	16	20	20
	h_0 [mm]	90	90	90	90
	UP BS	Ø 16	Ø 16	Ø 20	Ø 20
	d_b [mm]	20	20	25	25
	t_{tol} [mm]	0	0	0	0
	d_f [mm]	7	9	12	14
	Sk [-]	12	12	15	15
	max. T_{inst} [Nm]		www.upat.com → ETA-15/0555		

UPM-A / ASTA, UPM-I, UPM-SH

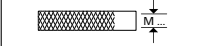
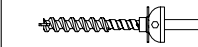



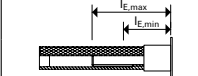
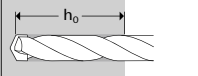
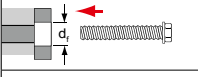




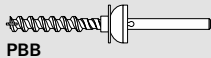


UPM-A / ASTA, PBB, PBZ

	UPM-A / ASTA	M8	M10	M12
	PBB	✓	✓	✓
	PBZ	✓	✓	✓
	 ETA-15/0555, ETAG 029, masonry use categories b, c or d	✓	✓	✓
	$h_{0,1}$ [mm]	80	80	80
	$h_{0,2}$ [mm]	100	100	100
	d_f [mm]	9	12	14
	Sk ($h_{0,1}$) [-]	15	15	15
	Sk ($h_{0,2}$) [-]	20	20	20
	max. T_{inst} [Nm]	2	2	2

UPM-I, PBB, PBZ

	UPM-I	M6	M8
	PBB	✓	✓
	PBZ	✓	✓
	 ETA-15/0555, ETAG 029, masonry use categories b, c or d	✓	✓
	$l_{E,min}$ [mm]	6	8
	$l_{E,max}$ [mm]	60	60
	$h_{0,1}$ [mm]	100	100
	d_f [mm]	7	9
	Sk [-]	20	20
	max. T_{inst} [Nm]	2	2



UPM-A / ASTA, UPM-I, PBB, PBZ

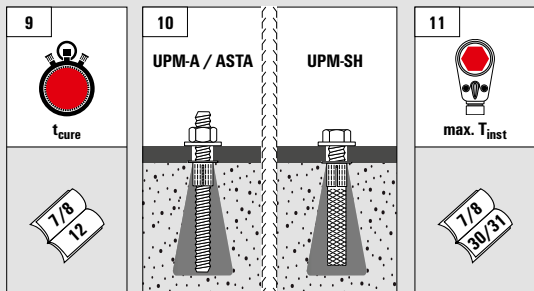
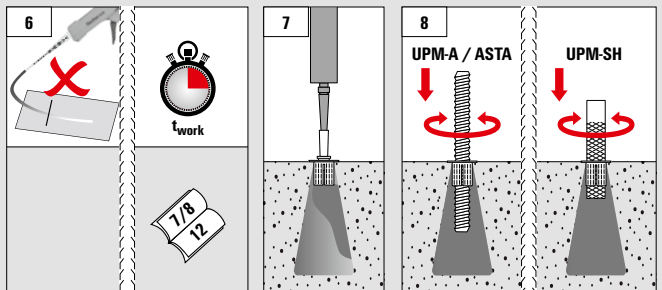
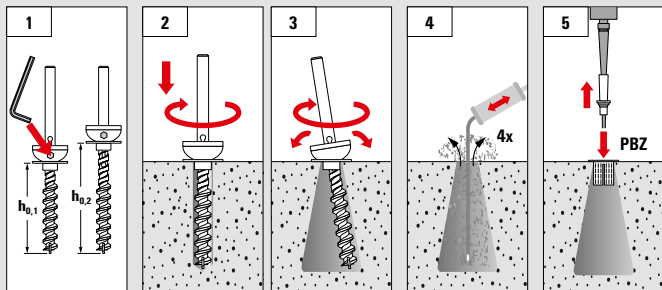


Table I Drill hole diameter / Accessories

Drill bit	Rods	Brush	Injection adapter		
\emptyset [mm]	\emptyset [mm]	\emptyset [mm]	item No.	size	colour
10	M 8	11	551766	-	-
12	M10	14	551767	12	nature
14	M12	16	551768	14	blue
18	M16	20	551769	18	yellow
24	M20	26	551770	24	brown
28	M24	30	78183	30	grey
30	M27	40	78184	30	grey
35	M30	40	78184	35	brown

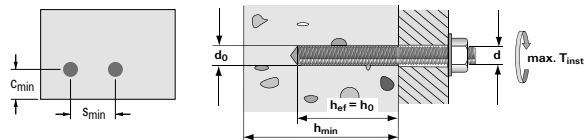
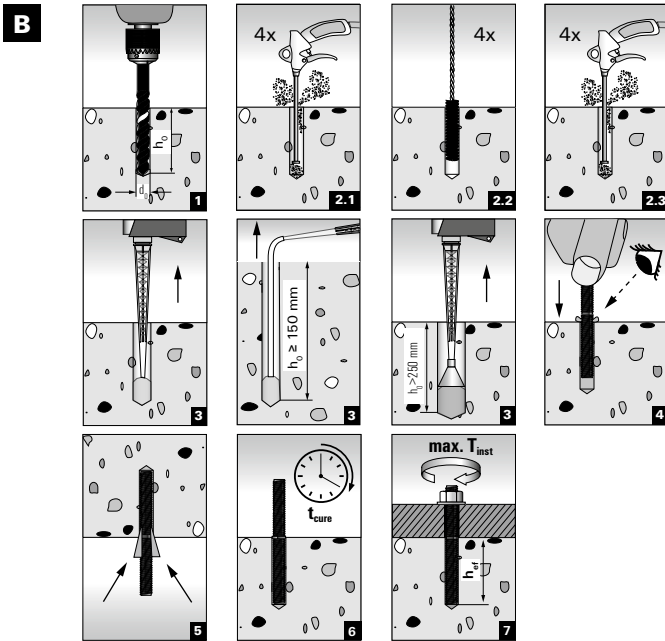
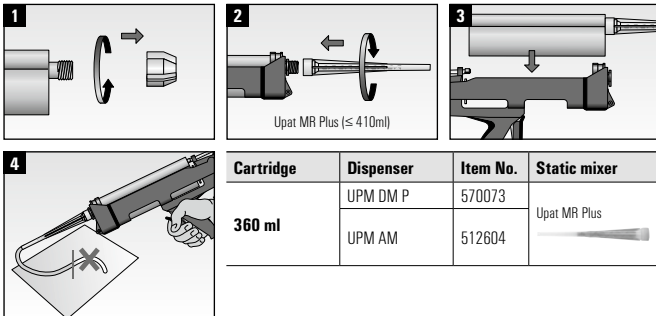


Table II Threaded rod, metric

d [mm]	d ₀ [mm]	h _{ef,min} [mm]	h _{ef,max} [mm]	h _{min} [mm]	S _{min} = C _{min} [mm]	T _{inst} [Nm]
M 8	10	60	96	h _{ef} + 30	40	10
M10	12	60	120		45	20
M12	14	72	144		55	40
M16	18	96	192	h _{ef} + 2d ₀	65	60
M20	24	120	240		85	120
M24	28	144	288		105	150
M27	30	162	324		120	200
M30	35	180	360		140	300

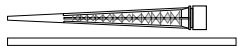
A UPM 44-360 / UPM 44-300



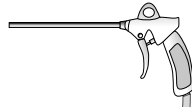
Cleaning brush UP BS (steel brush with steel bristles)



Static mixer Upat MR Plus and extension tube



Compressed air cleaning tool



Injection adapter



Hand pump



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