

# TP EA

Reaction Resin Mortar Based on Epoxy Acrylate

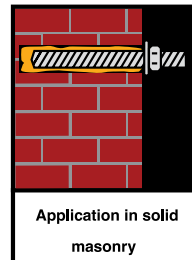
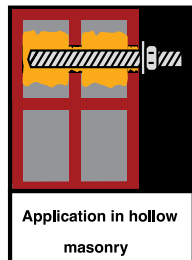
## ■ Product Description



TP EA is a 2-component reaction resin mortar based on an epoxy acrylate. This product may be used in combination of a hand-, battery- or pneumatic tool and a static mixer. It was designed as a cost-effective alternative for the anchoring of threaded rods and internal threaded rod sleeves for approved applications. By using a screen sleeve, an easy and safe application in hollow bricks is guaranteed. TP EA product is characterized by good applications with an ambient temperature up to 80°C.

Item Number	Description	Size
TP 1115-2	TP EA Epoxy Acrylate with two Ring Mixer	300ml

## ■ Approvals / Certificates



## ■ Properties and Benefits

- European approval in concrete ETA 13/0678
- Application in uncracked concrete, solid brick, and hollow brick with commercial threaded rods
- Overhead application
- Suitable for attachment points close to the edge, since anchoring is free of expansion forces
- Reduced chemical resistance
- High bending- and pressure strength
- Cartridge can be reused up to the end of the shelf life by replacing the static mixer or resealing cartridge with the screw cap
- Mechanical properties acc. to EN 196 Part1
  - Density: 1,66 kg/dm<sup>3</sup>
  - Compressive strength: 108 N/mm<sup>2</sup>
  - Bending strength: 56 N/mm<sup>2</sup>
  - Dynamic modulus of elasticity: 3300 N/mm<sup>2</sup>

## ■ Applications

Suitable for the fixation of facades, roofs, wood constructions, metal constructions metal profiles, console, railing, sanitary devices, cable trays, piping, etc.

## ■ Handling and Storage

- Storage: Store in a cold and dark place, storage temperature: from +5°C up to +25 °C
- Shelf Life: 18 months for standard cartridge (ST); 9 months for foil tube cartridge (SF)

## ■ Applications and Intended Use

- Underground:

Non-cracked concrete, light concrete, porous concrete, solid masonry, hollow brick, natural stone (Attention: natural stone, can discolour; shall be checked in advance); hammer-drilled holes

- Anchor Elements:

Threaded rods (zinc plated or hot dip, stainless steel and high corrosion resistance steel), reinforcing bars, internal threaded rods, profiled rod, steel section with undercuts (e.g. perforated section)

- Temperature Range:

Installation temperature: 5°C up to +35°C

Cartridge temperature: min. +5°C; optimal +20°C

Base material temperature after full curing: -40°C to +80°C

## ■ Setting Parameter - Concrete

Anchor size (Threaded rod)				M8	M10	M12	M16	M20	M24
Edge distance	$1,0 \times h_{ef}$	$C_{cr,N}$	[mm]	80	90	110	125	170	210
Min. edge distance	$5,0 \times d$	$C_{min}$	[mm]	40	50	60	80	100	120
Axial distance	$2,0 \times h_{ef}$	$S_{cr,N}$	[mm]	160	180	220	250	340	420
Min. axial distance	$5,0 \times d$	$S_{min}$	[mm]	40	50	60	80	100	120
Embedment depth		$h_{ef}$	[mm]	80	90	110	125	170	210
Min. part thickness		$h_{min}$	[mm]	$h_{ef} + 30 \text{ mm}$			$h_{ef} + 2 d_o$		
Anchor diameter		$d$	[mm]	8	10	12	16	20	24
Drill diameter		$d_o$	[mm]	10	12	14	18	24	28
Installation torque		$T_{inst.}$	[Nm]	10	20	40	60	120	150

## ■ Reactivity

Temperature of base material	Gelling and working time	Full curing time in dry base material	Full curing time in wet base material
-5° C	90 min.	360 min.	720 min.
0° C	45 min.	180 min.	360 min.
+5° C	25 min.	120 min.	240 min.
+10° C	15 min.	80 min.	160 min.
+20° C	6 min.	45 min.	90 min.
+30° C	4 min.	25 min.	50 min.
+35° C	2 min.	20 min.	40 min.

## ■ Recommended Loads - Concrete

The recommended loads are only valid for single anchor for a roughly design, if the following conditions are valid:  
 Dry or wet bore hole, uncracked concrete C20/25, steel 5.8

■  $C \geq C_{cr,N}$    ■  $S \geq S_{cr,N}$    ■  $h \geq 2 \times h_{ef}$

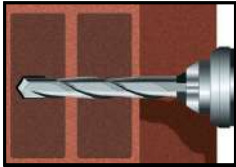
If the conditions are not fulfilled, the loads must be calculated acc. to ETAG 001 Annex C.  
 The safety factors are already included in the recommended loads.

Anchor size (Threaded rod)			M8	M10	M12	M16	M20	M24
Embedment depth	$h_{ef}$	[mm]	80	90	110	125	170	210
Edge distance	$C_{cr,N}$	[mm]	1,5 x $h_{ef}$					
Axial distance	$S_{cr,N}$	[mm]	3,0 x $h_{ef}$					
Recommended tension load 24° C/ 40° C <sup>2)</sup>	$N_{Rec}$	[kN]	8,6	12,1	16,8	21,2	33,9	50,3
Recommended tension load 50° C/ 80° C <sup>2)</sup>	$N_{Rec}$	[kN]	7,7	10,8	14,8	18,7	29,7	44,0
Recommended shear load without lever arm for steel property class 5.8 <sup>1)</sup>	$V_{Rec}$	[kN]	5,1	8,6	12,0	22,9	35,4	50,9

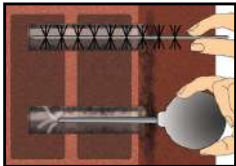
1) Shear load with lever arm acc. to Annex C of ETAG 001.

2) Short-term temperature / Long-term temperature. Long-term concrete temperatures are roughly constant over significant periods of time. Short-term elevated temperatures are those that occur over brief intervals, e.g. as a result of diurnal cycling.

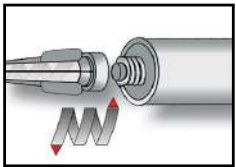
## ■ Usage Instructions - Hollow Bricks



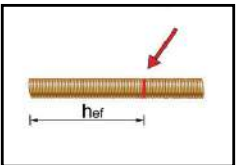
1. Drill without hammer drill mode a hole into the base material to the size and embedment depth required by the selected anchor.



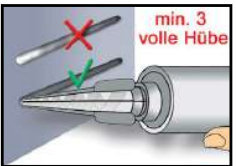
2. In case of a water-filled bore hole, the water has to be removed from the hole (e.g. by compressed air or vacuum cleaner). Starting from the bottom or back of the hole, blow the hole clean with a hand-pump a minimum of two times. Then, brush the hole with a nylon brush a minimum of two times. Finally, clean the hole again with a handpump a minimum of two times.



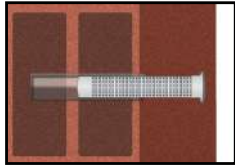
3. Attach a supplied static-mixing nozzle to the cartridge and load the cartridge into the correct dispensing tool. After every working interruption longer than the recommended working time, as well as for new cartridges, a new static-mixer shall be used.



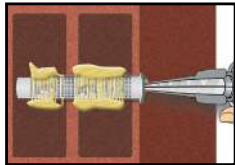
4. Prior to inserting the anchor rod into the filled bore hole, the position of the embedment depth shall be marked on the anchor rods.



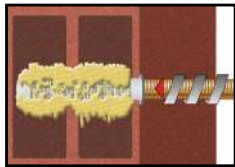
5. Prior to dispensing the mortar into the bore hole, squeeze out separately a minimum of three full strokes, and discard non-uniformly mixed adhesive components until the mortar shows a consistent grey colour.



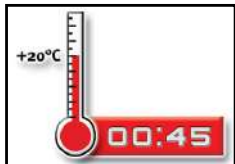
6. Insert the perforated sleeve into the bore hole. Make sure that the sleeve fits well into the hole. Never cut the sleeve! Only use sleeves that have the right length.



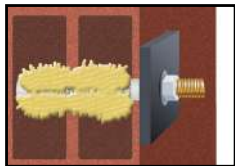
7. Starting from the back, fill the sleeve completely with adhesive. Observe the gel / working times.



8. Push the threaded rod or reinforcement bar into the sleeve while turning it slightly, to ensure a distribution of the adhesive until the back of the sleeve is reached. The anchor should be free of dirt, grease, oil, or other foreign material.



9. Allow the adhesive to cure to the specified time prior to applying any load to torque. Do not move or load the anchor until it is fully cured.



10. After full curing, the add-on part can be installed with the max. torque by using a calibrated torque wrench.