Injection resin ITH 410 Wi winter

SORMAT CODE 9640072911

Vinylester injection resin for use in cold winter conditions

- Styrene-free, two component winter resin with reduced curing time for bonding studs, bolts and rebars into drilled holes.
- Safe storage and use in temperatures down to -20 °C.
- ETA OPTION 1 (ETA-13/0774), ETA-17/0422 masonry ETAG 029
- Suitable also for overhead installations, LEED tested, LOW VOC content.
- Store partially used cartridge with mixer on. Reusable for up to a month depending on storage conditions. Change mixer before reusing.
- Mixing nozzle is included with each cartridge. Large cartridge size especially for professional use and serial installations.
- Suitable conditions related to stud and rebar material qualities: ZP for dry indoor and temporary outdoor use; HDG/MG and A2 for dry and humid indoor use, outdoor in rural areas only; A4 for indoor, outdoor and industrial use; HCR for extremely corrosive conditions.

PRODUCT OVERVIEW

Other codes	/
Material	Resin
Packages	piece: 1 / outer carton: 10 / pallet: 700
Weight	741.0 kg / 1000

APPLICATIONS

- Cold climate down to -20 °C
- Steel constructions
- Post-installed rebars
- Facades
- Railings
- Base plates
- Close edge applications
- Small anchor spacings

BASE MATERIALS

APPROVED FOR

- Aerated concrete block
- Cracked concrete
- Hollow light expanded clay aggregate block
- Non-cracked concrete
- Perforated clay brick
- Perforated sand-lime brick
- Solid clay brick
- Solid light expanded clay aggregate block
- Solid sand-lime brick

ALSO SUITABLE FOR

- Hollow-core slab
- Natural stone

APPROVALS / CERTIFICATES

ETA-13/0774 + DoPs

ETA-17/0422 + DoPs

TC 4560-15

1343-CPR-M 537-5/01.15

1343-CPR-M 537-6/01.15

Fire resistance ITH-Ve_ITH-Wi (DIN EN 1363-1:2012)

Seismic resistance (ETA-13/0774)

Gel and curing times

Base material temperature	Gel time	Curing time
+10 °C	6 min	1 h
+5 °C	6 min	1 h 20 min
0 °C	10 min	2 h 30 min
-5 °C	20 min	5 h
-10 °C	35 min	10 h
-15 °C	55 min	16 h
-20 °C	1 h 15 min	24 h

Installation details for solid base material

Stud size	SW	Hole in fixture (d_f)	Drill hole diameter (d_0)	Min. hole depth (h_1)	Embedment depth (h_{nom})	Theoretical resin consumption (vol)
M8	13 mm	9 mm	10 mm	80 mm	80 mm	5 ml
M10	17 mm	12 mm	12 mm	90 mm	90 mm	7 ml
M12	19 mm	14 mm	14 mm	110 mm	110 mm	12 ml
M16	24 mm	18 mm	18 mm	125 mm	125 mm	22 ml
M20	30 mm	22 mm	24 mm	170 mm	170 mm	52 ml
M24	36 mm	26 mm	28 mm	210 mm	210 mm	87 ml
M30	46 mm	33 mm	35 mm	280 mm	280 mm	180 ml

Performance data for solid base material

Stud size	Property class	Base material	Embedment depth (h_{nom})	Min. base material thickness (h_{min})	Installation torque (T_{inst})	Load type	Load direction	Load value
M8	Steel 5.8	Non-cracked concrete C20/25	80 mm	110 mm	10 Nm	N_{Rec}		8.6 kN
M8	Steel 5.8	Non-cracked concrete C20/25	80 mm	110 mm	10 Nm	V_{Rec}		5.1 kN
M8	Steel 5.8	Cracked concrete C20/25	80 mm	110 mm	10 Nm	N_{Rec}		4.3 kN
M8	Steel 5.8	Cracked concrete C20/25	80 mm	110 mm	10 Nm	V_{Rec}		3.3 kN
M10	Steel 5.8	Non-cracked concrete C20/25	90 mm	120 mm	20 Nm	N_{Rec}		13.5 kN
M10	Steel 5.8	Non-cracked concrete C20/25	90 mm	120 mm	20 Nm	V_{Rec}		8.6 kN
M10	Steel 5.8	Cracked concrete C20/25	90 mm	120 mm	20 Nm	N_{Rec}		6.2 kN
M10	Steel 5.8	Cracked concrete C20/25	90 mm	120 mm	20 Nm	V_{Rec}		5.6 kN
M12	Steel 5.8	Non-cracked concrete C20/25	120 mm	140 mm	40 Nm	N_{Rec}		19.7 kN
M12	Steel 5.8	Non-cracked concrete C20/25	120 mm	140 mm	40 Nm	V_{Rec}		12.0 kN
M12	Steel 5.8	Cracked concrete C20/25	120 mm	140 mm	40 Nm	N_{Rec}		9.1 kN
M12	Steel 5.8	Cracked concrete C20/25	120 mm	140 mm	40 Nm	V_{Rec}		7.5 kN
M16	Steel 5.8	Non-cracked concrete C20/25	140 mm	161 mm	80 Nm	N_{Rec}		28.0 kN
M16	Steel 5.8	Non-cracked concrete C20/25	140 mm	161 mm	80 Nm	V_{Rec}		22.3 kN
M16	Steel 5.8	Cracked concrete C20/25	140 mm	161 mm	80 Nm	N_{Rec}		13.7 kN
M16	Steel 5.8	Cracked concrete C20/25	140 mm	161 mm	80 Nm	V_{Rec}		12.3 kN
M20	Steel 5.8	Non-cracked concrete C20/25	170 mm	218 mm	120 Nm	N_{Rec}		44.4 kN
M20	Steel 5.8	Non-cracked concrete C20/25	170 mm	218 mm	120 Nm	V_{Rec}		34.9 kN
M20	Steel 5.8	Cracked concrete C20/25	170 mm	218 mm	120 Nm	N_{Rec}		23.3 kN

Stud size	Property class	Base material	Embedment depth (h)	Min. base material thickness (h)	Installation torque (T)	Load type	Load direction	Load value
M20	Steel 5.8	Cracked concrete C20/25	170 mm	218 mm	120 Nm	V_{Rec}		18.0 kN
M24	Steel 5.8	Non-cracked concrete C20/25	210 mm	266 mm	160 Nm	N_{Rec}		61.0 kN
M24	Steel 5.8	Non-cracked concrete C20/25	210 mm	266 mm	160 Nm	V_{Rec}		50.3 kN
M24	Steel 5.8	Cracked concrete C20/25	210 mm	266 mm	160 Nm	N_{Rec}		34.6 kN
M24	Steel 5.8	Cracked concrete C20/25	210 mm	266 mm	160 Nm	V_{Rec}		23.7 kN
M30	Steel 5.8	Non-cracked concrete C20/25	280 mm	350 mm	200 Nm	N_{Rec}		93.9 kN
M30	Steel 5.8	Non-cracked concrete C20/25	280 mm	350 mm	200 Nm	V_{Rec}		65.5 kN
M30	Steel 5.8	Cracked concrete C20/25	280 mm	350 mm	200 Nm	N_{Rec}		66.9 kN
M30	Steel 5.8	Cracked concrete C20/25	280 mm	350 mm	200 Nm	V_{Rec}		37.8 kN

Installation details by rebar diameter

Rebar class	Rebar diameter	Drill hole diameter (d_0)	Base material	Embedment depth (h_{nom})	Theoretical resin consumption (vol)	Load definition	Load type	Load direction	Load value
A500HV	8 mm	12 mm	Non-cracked concrete C20/25	80 mm	6 ml	F_{Rec}	N_{Rec}		9.6 kN
A500HV	8 mm	12 mm	Non-cracked concrete C20/25	80 mm	6 ml	F_{Rec}	V_{Rec}		6.7 kN
A500HV	8 mm	12 mm	Cracked concrete C20/25	80 mm	6 ml	F_{Rec}	N_{Rec}		4.3 kN
A500HV	8 mm	12 mm	Cracked concrete C20/25	80 mm	6 ml	F_{Rec}	V_{Rec}		3.3 kN
A500HV	10 mm	14 mm	Non-cracked concrete C20/25	90 mm	11 ml	F_{Rec}	N_{Rec}		13.5 kN
A500HV	10 mm	14 mm	Non-cracked concrete C20/25	90 mm	11 ml	F_{Rec}	V_{Rec}		10.5 kN
A500HV	10 mm	14 mm	Cracked concrete C20/25	90 mm	11 ml	F_{Rec}	N_{Rec}		6.2 kN
A500HV	10 mm	14 mm	Cracked concrete C20/25	90 mm	11 ml	F_{Rec}	V_{Rec}		5.6 kN
A500HV	12 mm	16 mm	Non-cracked concrete C20/25	110 mm	21 ml	F_{Rec}	N_{Rec}		19.7 kN
A500HV	12 mm	16 mm	Non-cracked concrete C20/25	110 mm	21 ml	F_{Rec}	V_{Rec}		14.8 kN
A500HV	12 mm	16 mm	Cracked concrete C20/25	110 mm	21 ml	F_{Rec}	N_{Rec}		9.1 kN
A500HV	12 mm	16 mm	Cracked concrete C20/25	110 mm	21 ml	F_{Rec}	V_{Rec}		7.5 kN
A500HV	14 mm	18 mm	Non-cracked concrete C20/25	115 mm	34 ml	F_{Rec}	N_{Rec}		24.1 kN
A500HV	14 mm	18 mm	Non-cracked concrete C20/25	115 mm	34 ml	F_{Rec}	V_{Rec}		20.0 kN
A500HV	14 mm	18 mm	Cracked concrete C20/25	115 mm	34 ml	F_{Rec}	N_{Rec}		11.0 kN
A500HV	14 mm	18 mm	Cracked concrete C20/25	115 mm	34 ml	F_{Rec}	V_{Rec}		9.9 kN
A500HV	16 mm	20 mm	Non-cracked concrete C20/25	125 mm	46 ml	F_{Rec}	N_{Rec}		28.0 kN
A500HV	16 mm	20 mm	Non-cracked concrete C20/25	125 mm	46 ml	F_{Rec}	V_{Rec}		26.2 kN
A500HV	16 mm	20 mm	Cracked concrete C20/25	125 mm	46 ml	F_{Rec}	N_{Rec}		13.7 kN

Rebar class	Rebar diameter	Drill hole diameter (d)	Base material	Embedment depth (h)	Theoretical resin consumption (vol)	Load definition	Load type	Load direction	Load value
A500HV	16 mm	20 mm	Cracked concrete C20/25	125 mm	46 ml	F_{Rec}	V_{Rec}		12.3 kN
A500HV	20 mm	24 mm	Non-cracked concrete C20/25	170 mm	83 ml	F_{Rec}	N_{Rec}		44.4 kN
A500HV	20 mm	24 mm	Non-cracked concrete C20/25	170 mm	83 ml	F_{Rec}	V_{Rec}		40.0 kN
A500HV	20 mm	24 mm	Cracked concrete C20/25	170 mm	83 ml	F_{Rec}	N_{Rec}		23.3 kN
A500HV	20 mm	24 mm	Cracked concrete C20/25	170 mm	83 ml	F_{Rec}	V_{Rec}		18.0 kN
A500HV	25 mm	32 mm	Non-cracked concrete C20/25	210 mm	134 ml	F_{Rec}	N_{Rec}		61.0 kN
A500HV	25 mm	32 mm	Non-cracked concrete C20/25	210 mm	134 ml	F_{Rec}	V_{Rec}		56.6 kN
A500HV	25 mm	32 mm	Cracked concrete C20/25	210 mm	134 ml	F_{Rec}	N_{Rec}		36.0 kN
A500HV	25 mm	32 mm	Cracked concrete C20/25	210 mm	134 ml	F_{Rec}	V_{Rec}		25.7 kN
A500HV	28 mm	35 mm	Non-cracked concrete C20/25	250 mm	278 ml	F_{Rec}	N_{Rec}		79.2 kN
A500HV	28 mm	35 mm	Non-cracked concrete C20/25	250 mm	278 ml	F_{Rec}	V_{Rec}		62.5 kN
A500HV	28 mm	35 mm	Cracked concrete C20/25	250 mm	278 ml	F_{Rec}	N_{Rec}		56.5 kN
A500HV	28 mm	35 mm	Cracked concrete C20/25	250 mm	278 ml	F_{Rec}	V_{Rec}		33.6 kN
A500HV	32 mm	40 mm	Non-cracked concrete C20/25	280 mm	567 ml	F_{Rec}	N_{Rec}		93.9 kN
A500HV	32 mm	40 mm	Non-cracked concrete C20/25	280 mm	567 ml	F_{Rec}	V_{Rec}		69.3 kN
A500HV	32 mm	40 mm	Cracked concrete C20/25	280 mm	567 ml	F_{Rec}	N_{Rec}		66.9 kN
A500HV	32 mm	40 mm	Cracked concrete C20/25	280 mm	567 ml	F_{Rec}	V_{Rec}		41.1 kN

Installation