

Injection resin ITH 410 Ve

SORMAT CODE 9640072901



Hi-performance vinylester injection resin for cracked concrete

- Rapid-curing, styrene-free, two component vinylester injection resin for bonding studs, bolts and rebars into drilled holes.
- Approvals cover also post-installed rebar connections, overhead installations, water filled holes and variable installation depths.
- High chemical resistance, LOW VOC content, NSF Certified for contact with drinking water, LEED tested, temperature resistance -40 °C - +120 °C.
- Store partially used cartridge with mixer on. 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; HGD/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.

APPLICATIONS

- Heavy steel constructions
- Railings
- Roads and bridges
- Masts
- Base plates
- Machines
- Harbour constructions
- Underwater applications
- Damp and waterfilled boreholes
- Close edge applications
- Small anchor spacings

PRODUCT OVERVIEW

Other codes	/
Material	Resin
Packages	piece: 1 / outer carton: 10 / pallet: 700
Weight	808.0 kg / 1000
GTIN-13	6416031729010

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



ETA-13/0774 + DoPs



ETA-17/0422 + DoPs



2873-CPR-M 537-6/12.2020



Drinking water contact



Seismic resistance (ETA-13/0774)



ETA-13/0775 + DoPs



2873-CPR-M 537-5/12.2020



2873-CPR-M 537-7/12.2020



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

Gel and curing times

Base material temperature	Gel time	Curing time
+40 °C	1,5 min	15 min
+30 °C	4 min	25 min
+20 °C	6 min	45 min
+10 °C	15 min	1 h 20 min
0 °C	45 min	7 h
-5 °C	1 h 30 min	14 h
-10 °C	1 h 30 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 _f)	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
ISH M6x48	10 mm	7 mm	10 mm	55 mm	48 mm	3 ml
ISH M8x80	13 mm	9 mm	14 mm	85 mm	80 mm	9 ml
ISH M10x80	17 mm	12 mm	16 mm	85 mm	80 mm	12 ml
ISH M12x80	19 mm	14 mm	18 mm	85 mm	80 mm	15 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	110 mm	140 mm	40 Nm	N _{Rec}		19.7 kN
M12	Steel 5.8	Non-cracked concrete C20/25	110 mm	140 mm	40 Nm	V _{Rec}		12.0 kN
M12	Steel 5.8	Cracked concrete C20/25	110 mm	140 mm	40 Nm	N _{Rec}		9.1 kN
M12	Steel 5.8	Cracked concrete C20/25	110 mm	140 mm	40 Nm	V _{Rec}		7.5 kN
M16	Steel 5.8	Non-cracked concrete C20/25	125 mm	161 mm	80 Nm	N _{Rec}		28.0 kN
M16	Steel 5.8	Non-cracked concrete C20/25	125 mm	161 mm	80 Nm	V _{Rec}		22.3 kN
M16	Steel 5.8	Cracked concrete C20/25	125 mm	161 mm	80 Nm	N _{Rec}		13.7 kN
M16	Steel 5.8	Cracked concrete C20/25	125 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 _{ef})	Min. base material thickness (h _{min})	Installation torque (T _{inst})	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
ISH M6x48	Steel 8.8	Non-cracked concrete C20/25	48 mm			N _{Rec}		1.5 kN
ISH M6x48	Steel 8.8	Non-cracked concrete C20/25	48 mm			V _{Rec}		1.5 kN
ISH M8x80	Steel 8.8	Non-cracked concrete C20/25	80 mm			N _{Rec}		8.3 kN
ISH M8x80	Steel 8.8	Non-cracked concrete C20/25	80 mm			V _{Rec}		8.3 kN
ISH M10x80	Steel 8.8	Non-cracked concrete C20/25	80 mm			N _{Rec}		9.3 kN
ISH M10x80	Steel 8.8	Non-cracked concrete C20/25	80 mm			V _{Rk}		9.3 kN
ISH M12x80	Steel 8.8	Non-cracked concrete C20/25	80 mm			N _{Rec}		9.5 kN
ISH M12x80	Steel 8.8	Non-cracked concrete C20/25	80 mm			V _{Rec}		9.5 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}		41.0 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



