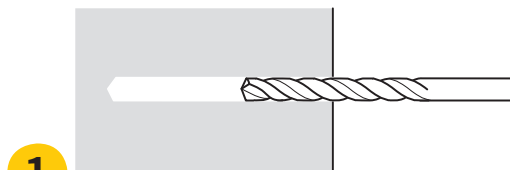


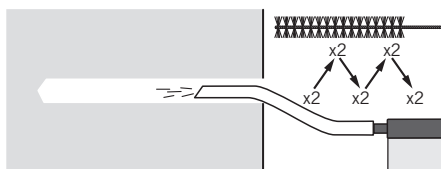
ESI-V STYRENE FREE INJECTION MORTAR

Installation:

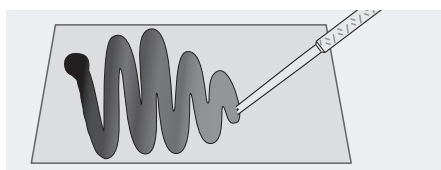
For fixing of post-installed reinforcement bars in concrete



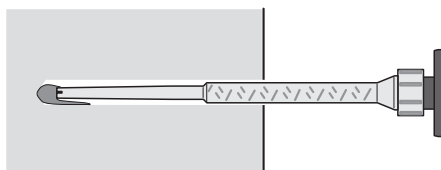
1 Drill a hole in correct diameter and depth



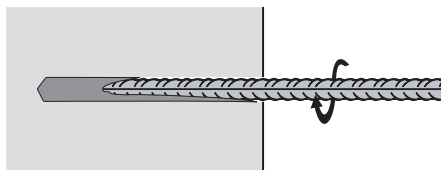
2 Clean the drilled hole thoroughly - follow above illustration



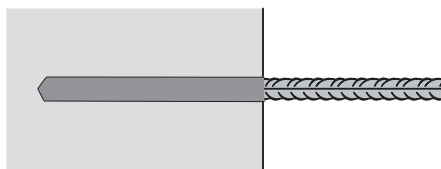
3 Eject approximately 10-15 cm mortar in order to ensure correct mixing ratio for injection



4 Insert the mixer into the drilled hole, and while the mixer is slowly retracted inject the correct volume of styrene free injection mortar



5 Insert reinforcement bar in a slowly rotating motion. For optimal filling of the hole excess mortar should flow out. Observe temperature dependent curing time



6 Installation is finished



Conditions:

This technical sheet states the basic design resistance for post-installed reinforcement bars together with ESI-V Expandet Styrene Free Injection Mortar (Winter) in concrete class C20/25.

ESI-V Expandet Styrene Free Injection Mortar (Winter) is a two-component hybrid mortar, supplied in 300 ml cartridges for use with normal professional silicone gun.

The design resistance is based on use of reinforcement bars with an yield strength of 500 N/mm².

Materials:

ESI-V Expandet Styrene Free Injection Mortar (Winter) is a two-component hybrid mortar – supplied in 300 ml cartridge for use with normal professional silicone gun.

CURING TIME:		
Temperature*	Processing time	Curing time
-18°C	100 minutter	1200 minutter
-10°C	75 minutter	480 minutter
-5°C	60 minutter	300 minutter
5°C	18 minutter	120 minutter
15°C	6 minutter	60 minutter

* In concrete.

Accessories:

- Blow Out Bulp.
- Brush.
- Injection gun for 300 ml.



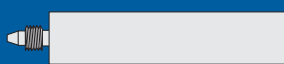
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ESI-V STYRENE FREE INJECTION MORTAR

Post-installed reinforcement bars with ESI-V Expandet Injection Mortar in concrete C20/25

The below stated design resistances for post-installed reinforcement bars do not take into account edge distance, spacing or conditions of actions.

Design resistance are basic values and for guidance only. All post-installation of reinforcement bars must be in accordance with national building code.

It is recommended that the chosen embedment depth \geq full developed yield.

Load Capacities

Design resistance* (kN) for reinforcement bars in concrete C20/25

h ₁	h _{nom}	Bar diameter							
		Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28
		Drill diameter, mm							
Depth of drilled hole mm	Embedment depth mm	12	14	16	18	22	28	35	38
100	100	13,9	15,9	17,4	18,8	20,2	22,5	24,3	25,5
120	120	16,7	19,1	20,9	22,5	24,2	27,0	29,2	30,6
140	140	19,3 [◇]	22,3	24,4	26,3	28,2	31,5	34,1	35,7
160	160		25,4	27,9	30,0	32,3	36,0	39,0	40,8
180	180		28,6	31,4	33,8	36,3	40,5	43,8	45,9
200	200		30,2 [◇]	34,8	37,6	40,3	45,0	48,7	51,0
220	220			38,3	41,3	44,3	49,5	53,6	56,1
240	240			41,8	45,1	48,4	54,0	58,4	61,2
260	260			43,5 [◇]	48,8	52,4	58,5	63,3	66,3
280	280				52,6	56,4	63,0	68,2	71,4
300	300				56,3	60,5	67,5	73,0	76,5
350	350				65,1 [◇]	70,5	78,7	85,2	89,3
400	400					77,3 [◇]	90,0	97,4	102,0
450	450						101,2	109,6	114,8
500	500						112,5	121,7	127,7
550	550						120,8 [◇]	133,9	140,3
600	600							146,1	153,1
650	650							158,3	165,8
700	700							170,4	178,6
750	750							182,6	191,3
800	800							188,8 [◇]	204,1
850	850								216,8
900	900								229,6
950	950								236,8 [◇]

* Design resistance is valid for reinforcement bars with characteristic yield strength of 500 N/mm² together with ESI-V Expandet Styrene Free Injection Mortar (Winter) in concrete C20/25.

◇ Full developed yield.

Partial safety factor for material (γ_m) is included in the design resistance.

Partial safety factor for bond γ_{mb} : 1,8

Partial safety factor for steel γ_{ms} : 1,3

Use of mortar per drilled hole in ml.

h ₁	h _{nom}	Bar diameter							
		Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28
		Drill diameter, mm							
Depth of drilled hole mm	Embedment depth mm	12	14	16	18	22	28	35	38
100	100	6,3	7,5	8,8	10,1	17,9			
120	120	7,5	9,0	10,6	12,1	21,5			
140	140	8,8	10,6	12,3	14,1	25,1	42,2		
160	160	10,1	12,1	14,1	16,1	28,7	48,3	75,4	
180	180	11,3	13,6	15,8	18,1	32,2	54,3	84,8	93,3
200	200	12,6	15,1	17,6	20,1	35,8	60,3	94,2	103,7
220	220	13,8	16,6	19,4	22,1	39,4	66,4	103,7	114,0
240	240	15,1	18,1	21,1	24,1	43,0	72,4	113,1	124,4
260	260	16,3	19,6	22,9	26,1	46,6	78,4	122,5	134,8
280	280	17,6	21,1	24,6	28,1	50,1	84,4	131,9	145,1
300	300	18,8	22,6	26,4	30,2	53,7	90,5	141,4	155,5
350	350		26,4	30,8	35,2	62,7	105,6	164,9	181,4
400	400			35,2	40,2	71,6	120,6	188,5	207,3
450	450				45,2	80,6	135,7	212,1	233,3
500	500				50,3	89,5	150,8	235,6	259,2
550	550				55,3	98,5	165,9	259,2	285,1
600	600					107,4	181,0	282,7	311,0
650	650						196,0	306,3	336,9
700	700							329,9	362,9
750	750							353,4	388,8
800	800							377,0	414,7
850	850								440,6
900	900								466,5
950	950								492,4

Specific embedment depth for full developed yield*

Bar diameter	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø28
Depth of drilled hole (h ₁), mm	140	191	250	247	384	538	776	929
Embedment depth (h _{nom}), mm	140	191	250	247	384	538	776	929
Load capacity, kN	19,3	30,2	43,5	59,2	77,3	120,8	188,8	236,8

* Design resistance is valid for reinforcement bars with characteristic yield strength of 500 N/mm² together with ESI-V Expandet Styrene Free Injection Mortar (Winter) in concrete C20/25.

Partial safety factor for material is included: $\gamma_{ms} = 1,3$



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