

Estop Azfast E400_{ST}

Epoxy Adhesive Anchoring System

Description

The **Estop Azfast E400_{ST}** is two component structural epoxy which is packaged in engineered plastic cartridges. It is used with a designed dispenser tool and proportional through a static mixing nozzle. The epoxy used is a high-performance resin which meet or exceeds ASTM C881-90 Type II standard.

Features

- High load capacities in concrete and masonry.
- Good performance in diamond cored holes.
- Suitable for dry, damp or water-filled holes.
- Large diameter hole applications.
- Excellent chemical resistance.
- Small edge and rebar spacing.
- Longer working time.

Physical Properties

Mixing Ratio	1: 1 by volume
Compressive strength, psi	12700
Bond Strength, psi	2628
Water Absorption	Less than 1%

Setting Time

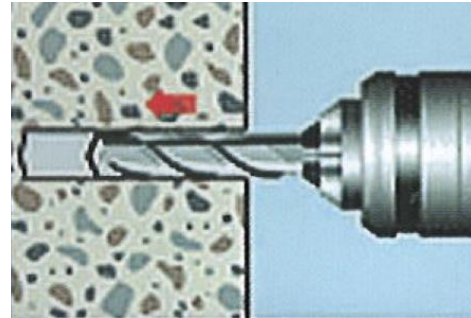
Hole Temp	10°C	20°C	30°C	40°C
Gel Time	2 hrs	30 mins	20 mins	12 mins
Cure Time	15 hrs	8 hrs	6 hrs	4 hrs
Full Cure	24 hrs	14 hrs	12 hrs	8 hrs

- 1) *The gel time is the maximum time during which the epoxy can worked before it begins to harden.*
- 2) *Anchors must not be disturbed before the cure time is achieved.*
- 3) *The full cure time is the minimum time required for the adhesive to achieve its ultimate load capacities.*

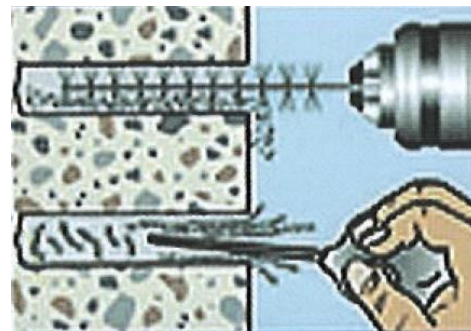


Estop Azfast E400_{ST} Epoxy Adhesive

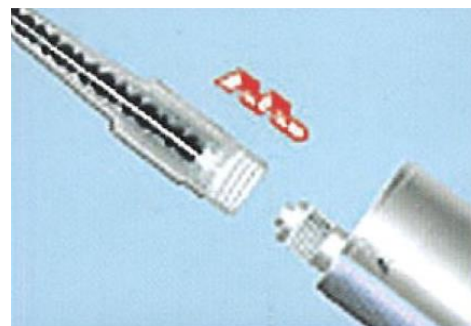
Application Instructions



1. Drill hole to correct diameter and depth



2. Use the brush and blow-out pump to clean the hole

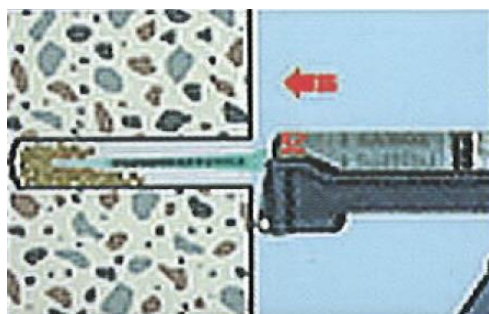


3. Cut off the opening and screw on the mixer nozzle

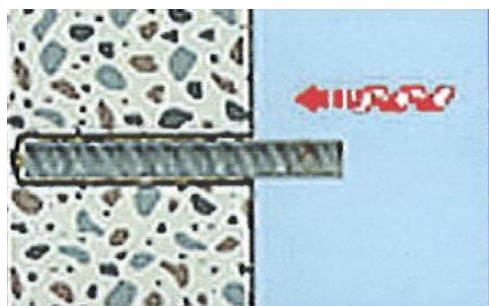
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4. Throw away 10cm of adhesive or until even colour is achieved

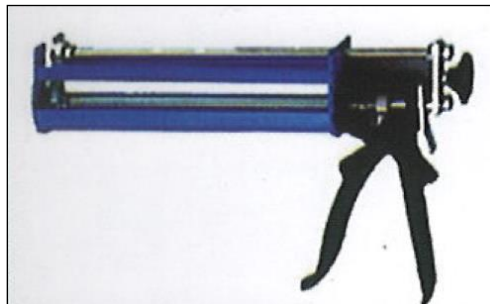


5. Inject adhesive to 1/3 hole depth

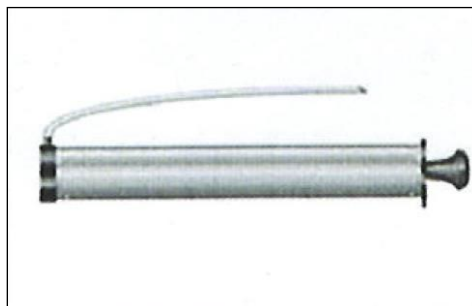


6. Insert rebar slowly with twisting motion until depth is achieved

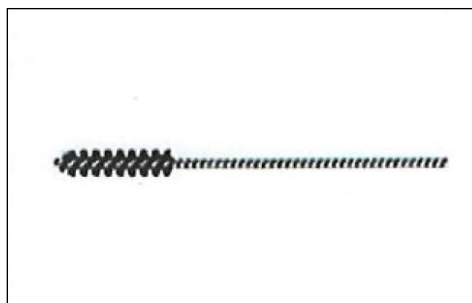
Accessories



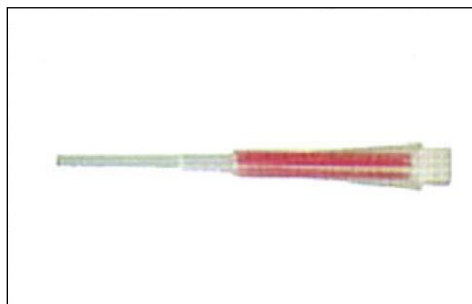
E400DT Dispensing Tool



400BP Air Blower



Steel Brush



E400MN Mixer Nozzle

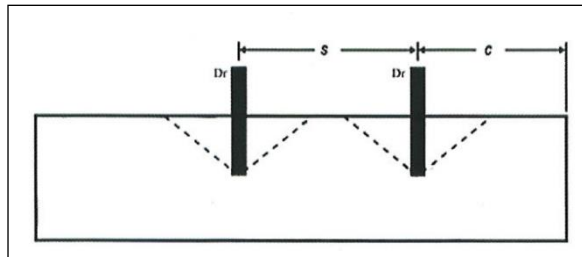
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Performance Data (Concrete - $\geq 25 \text{ N/mm}^2$)

Rebar Size	Drill Hole Diameter (mm)	Anchoring Depth (mm)	Yield Force of Rebar (kN)	Design Yield Force of Rebar (kN)	Mean Ultimate Tensile Bond Load (kN)	*Design Tensile Bond Load (kN)
T10	13 – 14	100	36.1	31.4	40.8	25.3
		150			61.2	38.0
		200			81.6	50.6
T13	16 – 18	130	61.2	53.1	65.3	40.6
		195			98.0	61.0
		260			130.7	81.1
T16	20 – 22	160	92.5	80.4	100.5	62.4
		240			150.8	93.6
		320			201.0	124.8
T20	25 – 28	200	144.5	125.7	157.1	97.6
		300			235.6	146.3
		400			314.2	195.2
T25	30 – 32	250	225.0	195.6	235.6	146.3
		375			353.4	219.5
		500			471.3	292.7
T28	35 – 38	280	283.3	246.3	307.9	191.2
		420			461.8	286.8
		560			615.8	382.5
T32	40 – 42	320	370.0	321.7	402.1	249.7
		480			603.2	374.6
		640			804.3	499.6
T40	50 – 55	400	578.2	502.7	628.4	390.3
		600			942.6	585.4
		800			1256.8	780.6

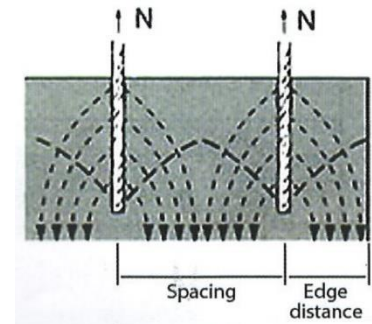
*The Design Tensile Bond Load is based on partial safety factor of $1.15 \times 1.40 = 1.61$, where 1.15 for **Estop Azfast E400_{ST}** bonded anchor and 1.40 to take into account for not ideally workmanship.

Influence Of Anchor Spacing And Edge Distance



For Non-Reinforced Concrete

The tensile force, N is transmitted to the concrete by the connection rebar. The force that can be transmitted depends on the cone of concrete which would break away for Non-Reinforced Concrete Influence Of Anchor Spacing and Edge Distance with the rebar and which is influenced by the anchorage depth, edge distance and spacing.



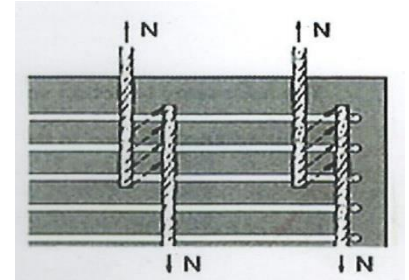
The following influence factor should be applied:

C / Dr or S / Dr	4	5	6	7	8	9	10	11	12	13	14	15
Rebar Spacing (S)	0.60	0.64	0.69	0.71	0.75	0.79	0.81	0.85	0.88	0.93	0.98	1.00
Edge Distance (C)	0.60	0.64	0.71	0.79	0.85	0.93	1.00					

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For Reinforced Concrete

Rebar spacing and edge distance are not a primary issue. Splitting forces cause by the transmission of the tensile force through diagonal concrete struts in compression is taken up by the transverse reinforcement.



Note:

The Reduction Influence factor can be considered as 1.00, if
: **The Anchoring depth = Required anchoring depth + Thickness of concrete cover**

Packing & Size

Estop Azfast E400_{ST}	400ml/set
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Technical Support

Denka offers a comprehensive range of high performance, high quality of product for both new and existing concrete surfaces, in addition, the company offers a technical support package to specifiers, end-user and contractors, as well as on-site technical assistance.

Storage

Estop Azfast E400_{ST} should be stored at dry condition at 5°C to 27°C. The product shelf life is 1½ years.

It shall be protected from high humidity and extreme heat.

Precaution

Contact with the skin must be avoided. Gloves and barrier cream should be used when handling these products. If contact with the resin occurs, the skin should be washed immediately with soap and water. Eye contamination must be immediately washed with copious quantities of water and medical treatment sought. Working areas should be well ventilated.

Additional Information

Denka Construction Solutions Malaysia Sdn Bhd offers a wide range of complementary products, which includes waterstops, waterproofing products, grouts, anchors, specialized flooring products. In addition, a wide range of products formulated for repair and refurbishment of spalled concrete are available.



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