

# Jor-Set Concrete Screws

Technical Specifications & Performance Data							
Diameter	Screw Length	Drill Bit	Depth of Embedment	Concrete*		Hollow Block*	
	Inches			Pull-out Lbs.	Shear Lbs.	Pull-out Lbs.	Shear Lbs.
3/16"	1-1/4"	5/32"	1"	480	823	-	-
	1-3/4"	"	1-1/4"	756	829	520	938
	2-1/4"	"	1-1/2"	856	1022	-	-
	2-3/4"	"	1-3/4"	1124	1075	-	-
1/4"	1-1/4"	3/16"	1"	936	1479	-	-
	1-3/4"	"	1-1/4"	1140	1849	873	1590
	2-1/4"	"	1-1/2"	1480	1859	-	-
	2-3/4"	"	1-3/4"	1932	1901	-	-

### \*Specific Testing Parameters

Hollow block: 1,500 psi  
Concrete: 3,320 psi

NOTE: All pullout values are based in close-tolerance holes drilled with carbide tipped drill bits. Designated holding power depends on the quality of the masonry material, depth of the embedment, and proper hole size.

These figures are offered only as a guide and are not guaranteed in any way by Danish Import, Inc. A safety factor of 4:1, or 25% of ultimate pullout value, is generally accepted as a safe working load; however, reference should always be made to applicable codes for the specific safe working ratio.

### Jor-set Concrete Screw - Screw Length:

The length of the Jor-set fastener to be used is determined by combining the thickness of the material to be attached with the desired depth of embedment in the base material. It is recommended that a minimum of 1" and a maximum of 1-3/4" embedment be used in determining fastener length. The diameter of the fastener and the depth of embedment affect pullout strengths. The correct hole must be drilled for the screw to obtain the holding values. In all cases the hole must be at least 1/4" deeper than the depth of the fastener embedment.

### Jor-Set Concrete Screws feature the Ruspert II Metal Finish

Ruspert<sup>®</sup> metal finish is a high-grade metal surface processing technology that prevents corrosion. It consists of three layers: the 1st layer; a metallic zinc layer, the 2nd layer; a high-grade anti-corrosion chemical conversion film, and a 3rd outer layer; baked ceramic surface coating. The distinguishing feature of Ruspert<sup>®</sup> is the tight joining of the baked ceramic surface coating and the chemical conversion film. These layers are bonded together through chemical reactions, and this unique method of combining layers results in a rigid combination of the coating films. Ruspert<sup>®</sup> treatment does not attribute its anti-corrosion properties to merely a single material, but the synergy of these three layers, which combined have superb rustproof qualities.

## Ruspert® features

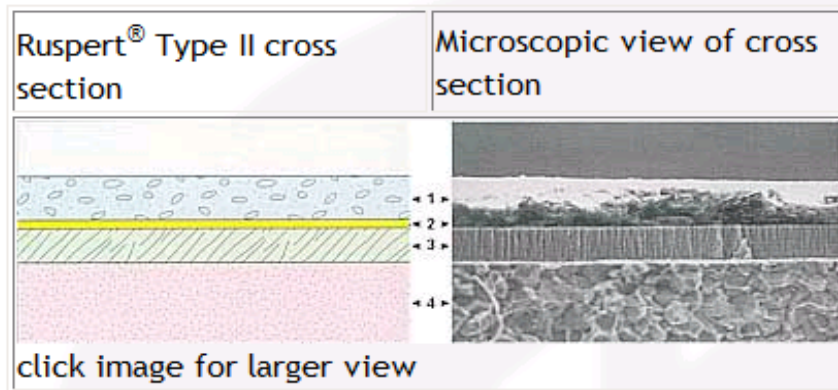
- Superior corrosion resistance  
Excellent resistance against gas, weathering and other kinds of corrosive factors including salt water
- Corrosion resistance against scratches  
Composite layers minimize the effect of scratches on the protection coating
- Electrolytic corrosion resistance  
Less contact corrosion with other metals
- Low processing temperature  
The drying temperature below 200°C protects the products from metallographic changes

## Processing steps

- Metallic zinc treatment
- Chemical treatment
- Ruspert® Coating
- Baking

## Types of processing

Type	Performance	Color
Ruspert® Type I	S.S.T. 500 hours DIN 50018 (0.2l) 15 cycles	Silver
Ruspert® Type II	S.S.T. 1000 hours DIN 50018 (0.2l) 15 cycles	Silver, Grey, Black, other colors
Ruspert® Type III	S.S.T. 1000 hours DIN 50018 (2.0l) 15 cycles	Grey
Ruspert® over hot dip galvanizing	S.S.T. 1000 hours DIN 50018 (0.2l) 15 cycles	Silver, Grey, Black, other colors



1. Baked ceramic surface coating layer (10µm)
2. Chemical conversion coating layer
3. Metallic zinc layer
4. Steel substrate

\* Chemical conversion coating layer + Metallic zinc layer = 5µm

- 3rd layer - Baked ceramic surface coating layer  
Corrosive elements are intercepted by the strong paint film made of ceramic materials
- 2nd layer - Chemical conversion coating layer  
Rustproof performance is improved as the chemical conversion inactivates the zinc plated surface and creates a tight adhesion between the chemically converted layer and the paint-layer
- 1st layer - Metallic zinc layer  
The steel/iron substrate is protected from corrosion by the self-sacrificial galvanic effect of the zinc coating

## Performance testing

Test item	Test result	Test method
Hardness of paint film	Over 4H	Pencil hardness (peeling test)
Adhesion	Nothing abnormal	Peeling test by adhesive tape on cross scribed test piece (1mm width)
Acid resistance	Nothing abnormal	Immersion in 5% sulfuric acid solution for 24 hours
Alkali resistance	Nothing abnormal	Immersion in 5% sodium hydroxide solution for 72 hours
Heat resistance	Nothing abnormal	Exposure to 250°C heat for 1 hour
Accelerated weathering	Free from red rust	In sunshine weather-o-meter for 1000 hours
Contact corrosion with other metals	Clearly superior to galvanization (colored chromating) and hot dip galvanizing	Corrosive investigation after Salt Spray Test (JIS Z2371) done comparatively on surface-treated steel bolts/nuts tightened on a stainless steel plate