Technical Bulletin for Sealed "N" Safe Fasteners

SEALED "N" SAFE®
THERMAL BLOCK SYSTEM
PATENTS PENDING

Introduction:

Primary fastener hold the panels to the building frame, while secondary fasteners hold the thermal block secure during application. The fasteners are therefore an integral part of the building, and their strength, weatherproofing, durability and appearance must be carefully considered as part of the overall design.

The following data explains the fasteners used for "Sealed & Safe" system.

Depending on the environment, location , application and requirements of the project you have two panel fasteners available.

PRIMARY EXTERIOR PANEL FASTENERS

Standard Environment

#12-14 x 2" Hex Washer Head Carbon Steel #3 Point Self Drilling Screw Electro Zinc Plated with Silver Ruspert Ceramic Coating Assembled with G-90 Galvanized Steel Bonded EPDM Sealing Washer

Physical Properties:

Hex Head—Across Flats:	.305 / .312
Head—Hex Height	.139 / .155
Washer Diameter	.398 / .432
Washer Thickness	.022 / .029
Thread Pitch	14TPI
Nominal Diameter of Fastener	.216
Bonded Sealing Washer Diameter	9/16" OD

Product Standards:

Thread & Head Dimensions:	ANSI / ASME B18.6.4
Self Drilling Performance	ASTM C1513-04 / SAE-J78
Steel	ASTM B548 C-1022
Electro Zinc Plating	ASTM F1941 Class Fe/Zn5 Type C 5 Microns Zinc with Yellow Dichromate
Silver Ruspert Coating	Baked Ceramic Coating
Kerternich—30 Cycles	DIN 50018 SFW 2.05
Salt Spray—1000 hours	ASTM B117

Bonded Washer:

Steel	ASTM / A653 G90 / Z275 Galvanized Steel
EPDM	ASTM D1000 M3Ba710B13C12F19

Pull Out Values:

Gauge	18	16	14	12	10
Lbs Ultimate	550	760	1060	1600	2650

Shear Value:

Gauge	20	18	16	14	12
Lbs Ultimate	770	1350	1620	1970	1980

Fastener Values:

Tensile	Lbs Minimum	2800
Shear	Average Lbs Ultimate	1900
Torque	Min Inch Lbs	92

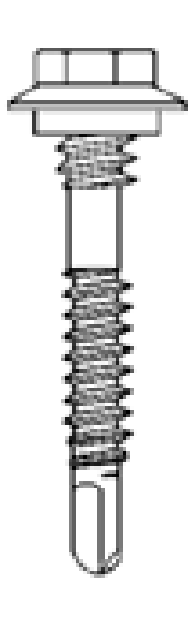
Drill and Tap Material Thickness Range: .080 to .210

This self drilling fastener is designed with the special thread configuration to drill through the panel, thermal block, tap into the framework and finally seal the outer panel. This is achieved using a 6 amp, 2000 to 2500 rpm electric screw gun with a depth locating nosepiece.

PRIMARY EXTERIOR PANEL FASTENERS

Harsh Environment

#12-14 x 2" 304 Stainless Steel Capped, Integral Cupped Hex Washer Head Carbon Steel #3 Point Self Drilling Screw Electro Zinc Plated with Silver Ruspert Ceramic Coating Assembled with EPDM Sealing-Washer



Physical Properties:

Hex Head—Across Flats:	.305 / .312
Head—Hex Height	.153 / .161
Washer Diameter	.581 / .588
Washer Thickness	.060 / .085
Thread Pitch	14TPI
Nominal Diameter of Fastener	.216
Sealing Washer Diameter	13/32" OD x 7/64 Thick

Product Standards:

Thread & Head Dimensions:	ANSI / ASME B18.6.4
Self Drilling Performance	ASTM C1513-04 / SAE-J78
Steel	ASTM B548 C-1022
Electro Zinc Plating	ASTM F1941 Class Fe/Zn5 Type C 5 Microns Zinc with Yellow Dichromate
Silver Ruspert Coating	Baked Ceramic Coating
Kerternich—30 Cycles	DIN 50018 SFW 2.05
Salt Spray—1000 hours	ASTM B117
Stainless Steel Cap	Austenitic Stainless Steel Type 304

EPDM Washer:

EPDM	ASTM D638
Shore Hardness	75-85 ASTM D2240
Heat Resistance	ASTM D573
Ozone Resistance	ASTM D1171

Pull Out Values:

Gauge	18	16	14	12	10
Lbs Ultimate	550	760	1060	1600	2650

Shear Values:

Gauge	20	18	16	14	12
Lbs Ultimate	770	1350	1620	1970	1980

Fastener Values:

Tensile	Lbs Minimum	2800
Shear	Average Lbs Ultimate	1900
Torque	Min Inch Lbs	92

Drill and Tap Material Thickness Range: .080 to .210

This self drilling fastener is designed with the special thread configuration to drill through the panel, thermal block, tap into the framework and finally seal the outer panel. This is achieved using a 6 amp, 2000 to 2500 rpm electric screw gun with a depth locating nosepiece.

SECONDARY THERMAL BLOCK FASTENER

#12-14 x 1 5/8 Phillips Square Recess Pancake Head Carbon Steel #3 Point Self Drilling Screw Electro Zinc Plated

Physical Properties:

Head Diameter:	.425 / .450
Head Height:	.085 / .095
Recess:	#2 Combination Philips / Square
Thread Pitch:	14 TPI
Nominal Diameter of Screw	.216

Performance Standards:

Thread and Head Dimensions	ANSI / ASME B18.6.4
Drilling Performance Requirements	ASTM C1513-04 / SAE-J78
Steel	ASTM B548 C-1022
Electro Zing Plating	5 Microns Zinc with Clear Chromate

Pull Out Values:

Gauge	18	16	14	12	10
Lbs Ultimate	550	760	1060	1600	2650

Shear Values:

Gauge	20	18	16	14	12
Lbs Ultimate	770	1350	1620	1970	1980

Fastener Values:

Tensile	Lbs Minimum	2800
Shear	Average Lbs Ultimate	1900
Torque	Min Inch Lbs	92

Drill and Tap Material Thickness Range: .080 to .210

This self drilling fastener is designed with a special thread configuration to drill through the enclosed thermal block (24 gauge steel on top and underside of the thermal block). This is achieved using a 6 amp, 2000 to 2500 rpm electric screw gun with a depth locating nosepiece.

SEALED "N" SAFE®
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COMPOUND AND SPECIFICATION DATA FOR MASTER SEAL® BLACK EPDM

TYPE 1: TYPICAL PHYSICAL PROPERTIES OF MASTER SEAL SEAL EPDM KV KL70-587
ASTM D2000 M3BA710$B_{13}C_{12}F_{19}$

PROPERTY	VALUE	TEST METHOD
BASE MATERIAL	CROSS-LINKED EPDM ETHYLENE PROPYLENE DIENE TERPOLYMER	N/A
COLOR	BLACK	N/A
TEST LEVEL	3	GRADE
TEST TEMPERATURE	B 100° C	TYPE
VOLUME SWELL	A NO REQUIREMENT	CLASS
DUROMETER HARDNESS	70 ± 5	ASTM D2240
TENSILE STRENGHTH	10 MPA (1450 psi) MINIMUM	ASTM D412
ULTIMATE ELONGATION	250% MINIMUM	ASTM 412A/C
HEAT RESISTANCE	HEAT AGING 70 HRS @ 100° C CHANGE / HARDNESS MAXIMUM ± 10 PTS CHANGE / TENSILE MAXIMUM -25% CHANGE / ULTIMATE ELONGATION MAX -25%	ASTM D573
COMPRESSION SET	MAXIMUM 25%	ASTM D395B
OZONE RESISTANCE	NO OBSERVED EFFECT (70 HRS @ 50 pphm)	
	100% QUALITY RETENSION FACING	ASTM D1171
LOW TEMPERATURE BRITTLENESS	NON-BRITTLE 3 min @ -55° C	ASTM D2137
UV RESISTANCE	EXCELLENT	
RESISTANCE TO AGING	EXCELLENT	
NON-STAINING	PASS	