

SUBJECT: EXTREME'S SIP SCREWS

Extreme's SIP screws are available from Extreme Panels for the attachment of Extreme SIPs to wood or metal substrates. These screws were developed to provide an engineered fastener that meets the requirements of Extreme Panels building code recognized assemblies.

Please find attached engineering properties (pages 2-4) for the Extreme's SIP Wood Screws, Light-Duty Metal Screws, and Heavy-Duty Metal Screws. The properties include withdrawal, shear, pull-through, and tensile strength.

The values provided for Extreme's SIP Screws are maximum values. Appropriate safety factors should be applied for the design as determined by the project architect and/or engineer.

WOOD SCREWS:

Extreme's SIP Wood Screws are used to attach SIPs to wood structural members and substrates.

LIGHT-DUTY METAL SCREWS:

Extreme's SIPs Light-Duty Fasteners are used to attach SIPs to light gauge steel members up to 16-gauge thickness metal.

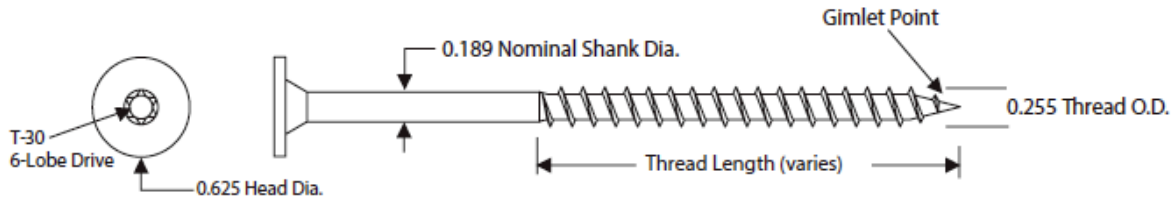
HEAVY-DUTY METAL SCREWS:

Extreme's SIP Heavy-Duty Metal Screws are used to attach SIPs to metal structural members and substrates. Extreme's SIP Heavy-Duty Metal Screws can self-drill into 3/16" steel without pilot hole predrilling. Installation is direct and fast; no wood nailers are required.

The Heavy-Duty Metal Screw should be driven with a low rpm (<1500 rpm) high-torque drill. Firm, but not excessive, pressure should be applied. This allows the drill point to engage the surface of the metal to cut and clear away metal kerf, letting the threads of the screw pull through the metal substrate. Excessive pressure and/or rpm will dull the drill point and render the screw ineffective.

EXTREME'S SIP WOOD SCREW PROPERTIES

Extreme's SIP Wood Metal Screw property values provided are average ultimate values. As determined by the project architect/engineer, appropriate safety factors must be used in design.



WOOD SCREW PROPERTIES			
Tensile (lbs) AISI S904	Shear (lbs) AISI S904	Bending Yield Strength - Fyb (psi) ASTM F1575	Corrosive Resistance ASTM D6294, ETAG 006
3555	2580	185,000	<15% Red Rust after 30 cycles

WITHDRAWAL: LUMBER & ENGINEERED WOOD - LBS./IN. ^{1,2}							
SPF/HF (0.42)		DF/SP (0.50)		LVL (0.50)		LSL (0.50)	OSB (7/16")
Face Grain	Edge Grain	Face Grain	Edge Grain	Face Grain	Edge Grain	Face Grain	Face
799	615	899	702	556	495	711	265

¹ Load values include fastener tip.

² 1" fastener embedment into face / edge grain.

WITHDRAWAL: CONCRETE & CMU - LBS. ¹		
2500 psi Concrete	5000 psi Concrete	CMU ²
682	869	713

¹ Fastener penetrates 1" into concrete or CMU block, including the tip.

² Concrete Masonary unit (CMU) conforming to ASTM C90.

HEAD PULL-THRU - LBS.	
7/16" OSB	SIP
490	630

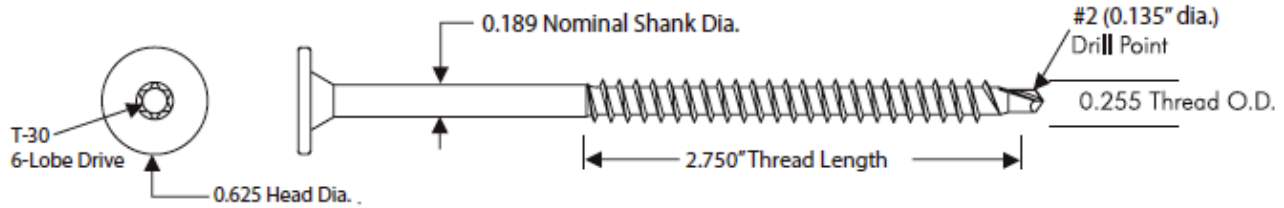
¹ 1-3/4" fastener embedment into edge grain, including tip.

² 1" fastener embedment into face grain, including tip.

LATERAL LOAD RESISTANCE - LBS.		
Main Member	Side Member	Load
SPF ^{1,2}	4-1/2" to 12-1/4" SIP	943

EXTREME'S LIGHT DUTY METAL SCREW PROPERTIES

Extreme's Light Duty Metal Screw property values provided are average ultimate values. As determined by the project architect/engineer, appropriate safety factors must be used in design.



LIGHT DUTY METAL SCREW PROPERTIES

Tensile (lbs) AISI S904	Shear (lbs) AISI S904	Bending Yield Strength - Fyb (psi) ASTM F1575	Corrosive Resistance ASTM D6294, ETAG 006
3390	2490	185,000	<15% Red Rust after 30 cycles

WITHDRAWAL: CORRUGATED STEEL DECK - LBS.

24 ga. (36 ksi)	22 ga. (36 ksi)	22 ga. (85 ksi)	20 ga. (36 ksi)	18 ga. (36 ksi)	16 ga. (36 ksi)	16 ga. (100 ksi)
250	381	435	449	694	896	1186

* Minimum 3/4" penetration of fastener through deck from underside of deck.

WITHDRAWAL: LUMBER & ENGINEERED WOOD - LBS./IN.¹

SPF/HF (0.42)		DF/SP (0.50)		LVL (0.50)		LSL (0.50)	OSB (7/16")
Face Grain	Edge Grain	Face Grain	Edge Grain	Face Grain	Edge Grain	Face Grain	Face
662	497	732	720	540	469	646	284

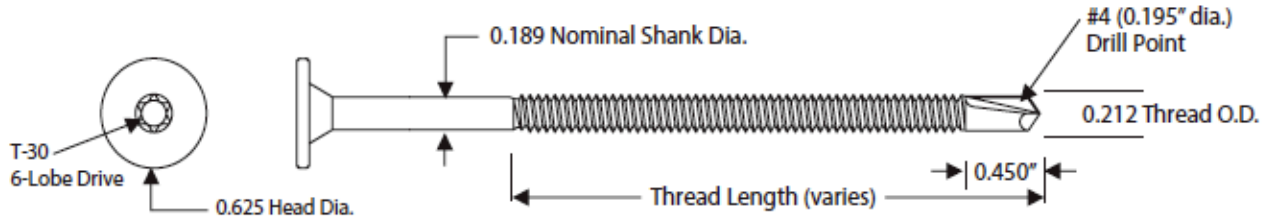
¹ Load values include fastener tip.

HEAD PULL-THRU - LBS

7/16" OSB	SIP
490	630

EXTREME'S HEAVY DUTY METAL SCREW PROPERTIES

Extreme's Heavy Duty Metal Screw property values provided are average ultimate values. As determined by the project architect/engineer, appropriate safety factors must be used in design.



HEAVY DUTY METAL SCREW PROPERTIES			
Tensile (lbs) AISI S904	Shear (lbs) AISI S904	Bending Yield Strength - Fyb (psi) ASTM F1575	Corrosive Resistance ASTM D6294, ETAG 006
3855	2625	185,000	<15% Red Rust after 30 cycles

WITHDRAWAL: CORRUGATED STEEL DECK - LBS. ¹					
16 ga. (36 ksi)	16 ga. (100 ksi)	12 ga. (50 ksi)	1/8" (36 ksi)	3/16" (60 ksi)	1/4" (60 ksi)
491	794	1255	1454	3098	3814

¹ Minimum (3) threads of penetration of fastener through deck as measured from underside of steel.

HEAD PULL-THRU - LBS.	
7/16" OSB	SIP
490	630

LATERAL LOAD RESISTANCE - LBS.		
Main Member	Side Member	Load
1/8" Structural Steel ¹	4-1/2" to 12-1/4" SIP	929

¹ Minimum (3) threads of penetration of fastener through steel as measured from underside of steel.