

## 100% MDI RESINS

T-STRAND Pro is manufactured with 100% MDI (methylene diphenyl di-isocyanate) resins. MDI is the superior choice in resin technology which provides a supreme bond with OSB strands. MDI resins create chemical bonds whereas the traditional PF (formaldehyde-based resins) provide mostly mechanical bonds. This allows MDI bonds to form a diffusion interphase in which the resin spreads over the surface of the wood and penetrates between the fibers, cell lumen, and even cell walls.

### What does this mean to a user of T-STRAND Pro?

Builders can feel confident they are using a product utilizing technology with the highest quality performance. T-STRAND Pro will display moisture resistance and strength values beyond comparison which allow us to warranty the product with our 365 No-Sand Guarantee and our 50 Year Limited Warranty.

## DESIGN PROPERTIES

T-STRAND Pro OSB T&G Subfloor will be specified based on the span rating of the panel. In some instances the actual design values will be required for the application. The Design Values in this table provide standard values for OSB based on the International Building Code.

### Design Values for T-STRAND Pro OSB T&G Subfloor (100% Load Duration)

Span rating		=	20" o.c.		24" o.c.		32" o.c.		48" o.c.	
Thickness Category		=	19/32		23/32		7/8		1 1/8	
Strength axis		=	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
Bending	Strength (MOR) (lb-in./ft of width)	$F_b S$	575	250	770	385	1,050	685	1,900	1,200
	Stiffness (MOE) (lb-in <sup>2</sup> /ft of width)	EI	210,000	40,500	300,000	80,500	650,000	235,000	1,150,000	495,000
Shear	Shear in-the-plane (lb/ft of width)	$F_s$ (lb/Q)	205	205	250	250	300	300	385	385
	Rigidity through-the-thickness (lb/in. of panel depth)	$G_v t_v$	87,000	87,000	93,000	93,000	110,000	110,000	155,000	155,000
	Shear through-the-thickness (lb/in. of shear-resisting panel length)	$F_v t_v$	195	195	215	215	230	230	305	305
Axial	Axial tension (lb/ft of width)	$F_t A$	2,900	2,100	3,350	2,550	4,000	3,250	5,600	4,750
	Axial compression	$F_c A$	4,200	4,000	5,000	4,300	6,300	6,200	8,100	6,750
	Axial Stiffness (lb/ft of width x 10 <sup>6</sup> )	EA	5.00	2.90	5.85	3.30	7.50	4.20	8.20	4.60

### Screw/Nail Design Values

T-STRAND Pro OSB T&G Subfloor panels Screw/Nail Design Values can be calculated using the National Design Specification for Wood guide.

Values are adjusted for duration of load, creep, elevated moisture or temperature. Refer to the current Engineered Wood Construction Guide from APA.

For withdrawal, use equivalent Specific Gravity as follows:

- Smooth or screw-shank nails = 0.40, ring-shank nails = 0.70, wood screws = 0.45. Design values for nail or screw withdrawal resistance are shown in the National Design Specification.
- For lateral resistance, use equivalent Specific Gravity (SG) = 0.50. Design values for nail or screw lateral resistance are found in the National Design Specification.

