

## JOB PROFILE

### MILWAUKEE ROAD DEPOT – MINNEAPOLIS, MN

**CONTRACTOR:**

Structural Wood Corp.

**ARCHITECT:** Shea Architects

**STRUCTURAL ENGINEER:**

Mattson McDonald

**DESIGN:**

Independent  
Consulting Engineers

**SALES AGENT:**

Rose/Fleischaker Assoc.

*“I couldn't be more pleased that we're moving forward with the renovation of this wonderfully historic treasure. CSM, MCDA and Shea Architects have done a wonderful job capturing the potential of the Milwaukee Road Depot. This complex will be a vibrant link between downtown Minneapolis and our thriving riverfront for years to come”*

*-Minneapolis Mayor  
Sayles Belton*



The Milwaukee Road Depot Railroad Station is one of the last long-span truss-roofed sheds surviving in the nation, and the only one remaining in the upper Midwest. The depot was built in 1899, and in 1978 it was placed on the national register of historic places, went out of business, and has sat vacant ever since. At its peak in 1920, the Milwaukee Road Depot serviced 29 trains daily. In 1992, the MCDA purchased the depot and its surrounding seven blocks to preserve and rehabilitate it. Plans were made in accordance with economic and historical guidelines, for the depot to house an ice skating rink, restaurant and hotel. The original steel trusses were refinished and left in place.

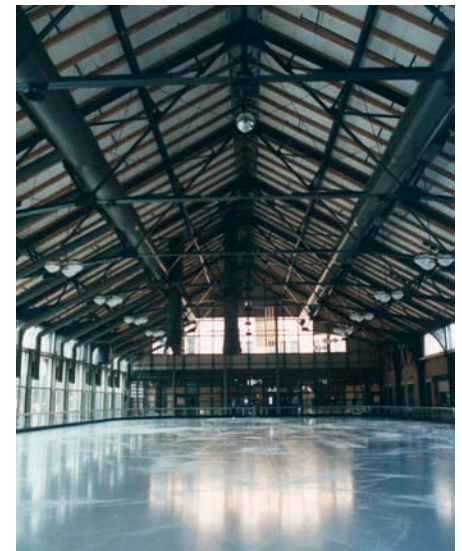
Tectum III™ Roof Deck was chosen and installed over the ice skating rink. The train shed was developed into an enclosed rink specifically designed for figure skating. With its glass walls, brick and ice surfaces, sound was certain to be reflected so much that people couldn't hear each other. Tectum™ Roof Deck provided the solution. With its great sound-



*Approximately 65,802 sq. ft. of six-inch Tectum III covers the 700-foot long train shed. Tectum panels are manufactured from sustainable raw materials.*



absorption qualities and rough texture, Tectum Roof Deck provided great acoustics and maintained the outdoor “feel” of the train shed construction. Advantages provided by Tectum III are vapor barrier and insulation qualities to exceed the State of Minnesota's energy code and maintain the ice at an optimum level. Further, Tectum III provided a nailable surface to attach the emissivity barrier installed to protect the ice sheet from infrared rays. Also, the Tectum Roof Deck made it possible to attach the architectural roofing system, 24-gauge steel Petersen Aluminum Corp. Snap Clad.



## TECTUM ROOF DECK DESIGN GUIDELINES

### DESIGN LOAD DATA\*\*

Span in inches based on nominal 3" wide structural support members Deflection L/240 or less.  
Contact Tectum Inc. for recommended spans when used in high-humidity applications.

System	Thickness***	Wt. (psf)***	Product	24"	30"	36"	38"	40"	42"	44"	48"	50"	52"	54"	60"	66"	72"	84"	96"		
Plank	2"	3.5	I	130	75	50	45	40	35												
	2 1/2"	4.5	I	150	120	80	70	60	50	45	35										
	3"	5.3	I	200	125	102	91	82	74	65	50	45	40	35							
LS Plank	2"	3.8	I	130	75	75	75	70	64	57	50	45	40	35							
	2 1/2"	4.7	I	150	120	120	120	114	103	93	77	70	65	60	50	35					
	3"	5.5	I	200	125	125	125	120	115	110	104	96	88	71	58	50					
Comp. Plank	3 1/2"	4.4	III	200	180	165	150	135	125	115	95	85	75	70	60	55	50				
	4"	4.6	III		200	195	175	155	140	120	110	100	95	85	70	60	50	35			
	5"	5.0	III						200	175	135	125	115	105	85	70	60	50	35		
T-III	6", 7"	5.2	III								200	180	170	160	150	125	105	75	60		
	8", 9", 10"	5.5	III												200	165	136	100	75		
NS Plank	2 1/2"	4.7	NS	200	125	100	90	80	74	65	50										
	3"	5.6	NS	200	195	135	120	110	100	90	75	70	65	60	50						
	3 1/2", 4"	6.4	NS		200	195	175	155	140	120	110	100	95	85	70	60	50				
E Plank	2 3/4"	4.4	E	200	125	100	90	80	74	65	50										
	3 1/2"	4.5	E	200	150	135	120	110	100	90	75	70	65	60	50						
	4"	4.6	E	200	180	165	150	135	125	115	95	85	75	70	60	55	50	35			
	5"	5.0	E		200	195	175	155	140	120	110	100	95	85	70	65	60	45			
	6", 7"	5.2	E								200	180	170	160	150	125	105	75	60		
	8", 9", 10"	5.5	E												200	165	130	100	75		

\*\* All published design loads are based on minimum safety factor of four. For example, 50 psf design load has an ultimate load of 200 psf.

\*\*\* Thickness and weight are nominal. For loads greater than 200 lbs., contact Tectum Inc.

### DIAPHRAGM DESIGN DATA

#### TECTUM ROOF DECK FASTENER SPACING SCHEDULE

Type	Panel Size	Test No.	Joist	Span <sup>4</sup>	Fasteners	Field Spacing <sup>2</sup>	Perimeter	Adhesive <sup>1,3</sup>	Grout	ULT/LF	DSN/LF
T-I Plank	3"x31"x96"	88-3113-1	Steel	48"	S-25/2" Washer	3/Joist/Panel	16" o.c.	No	None	825	275
T-I Plank	3"x31"x96"	88-3113-1	Steel	48"	S-25/2" Washer	3/Joist/Panel	16" o.c.	T&G+Joist	None	1350	450
T-I LS	2 1/2"x31"x120"	94-30037D	Wood	60"	3 3/4" 14 Gauge Scr/2"w	2/Joist/Panel	10" o.c. sides + ends	T&G+Joist	None	1170	389
T-I LS	3"x31"x144"	94-30037D	Wood	72"	4 1/2" 14 Gauge Scr/2"w	2/Joist/Panel	12" o.c. sides + ends	T&G+Joist	None	860	286
T-I LS	2"x31"x96"	94-30270	Wood	48"	3 1/4" 14 Gauge Scr/2"w	2/Joist/Panel	12" o.c. sides + ends	T&G+Joist	None	964	321
T-I LS <sup>5</sup>	3" x 31" x 144"	02-030070B	Wood	72"	4 1/2" 14 Gauge Scr/2"w	2/Joist/Panel	12" o.c. sides + ends	T&G + Joist	None	1631	542
T-I Tile	2"x23 1/2"x143"	88-3113-1	Steel	72"	112 Ts/112 x Ts	24" o.c.	112 Ts	No	4 Sides	925	313
T-I Tile	2"x31 1/2"x95"	88-3113-1	Steel	96"	168 Ts/112 x Ts	32" o.c.	168 Ts	No	4 Sides	575	200
T-I RT/TG	2"x31 1/2"x96"	91-3222	Steel	96"	000-5-14-2+S-25/2"w	32" o.c.+2/Joist	S-25@16"+3/End	T&G+Per	Long Edge	696	231
T-I Tile	2"x31 1/2"x95"	94-30037H	Steel	96"	000-5-14-2+S-25/2"w	2/Joist	10 1/2" o.c.	Joist	Long Edge	835	278
T-I Tile <sup>5</sup>	2"x31 1/2"x96"	02-030070A	Steel	96"	218 Ts/3 1/4" 14 Gauge/2"w	2/Joist/panel	12" o.c. sides + ends	Joist	Long Edge	1530	509
T-III Plank	3 1/2"x47"x144"	94-30037A	Wood	72"	6" 14 Gauge Sip Scr	3/Joist/Panel	12" o.c. sides + ends	T&G+Joist	None	1068	355
T-III Plank	3 1/2"x47"x120"	94-30037B	Wood	60"	6" 14 Gauge Sip Scr	3/Joist/Panel	12" o.c. sides + ends	T&G+Joist	None	1093	363
T-III Plank	5"x47"x144"	94-30037E	Wood	72"	6" 14 Gauge Sip Scr	3/Joist/Panel	12" o.c. sides + ends	T&G+Joist	None	964	320
T-III Tile	3 1/2"x47 1/2"x96"	95-30060	Steel	96"	000-3-14-3 1/2"+14GA/1 1/2"w	3/Joist/Panel	12" o.c. sides + ends	Joist	Long Edge	939	312
T-E Plank	4"x47"x144"	94-30037C	Wood	72"	6" 14 Gauge Sip Scr	3/Joist/Panel	12" o.c. sides + ends	T&G+Joist	None	1042	346
T-E Plank	5"x47"x168"	98030199	Wood	84"	6" 14 Gauge Sip Scr	3/Joist/Panel	12" o.c. sides + ends	T&G+Joist	None	1012	336
T-E Plank	5"x48"x96"	94030321	Wood	96"	6" 14 Gauge Sip Scr	4/Joist/Panel	12" o.c. sides + ends	T&G+Joist	None	604	201
T-III Plank/Overlay	5"x47"x144"		Wood	72"	6" 14 Gauge Scr/1 1/2"w	6/Joist/Panel	6" o.c. sides + ends	T&G+Joist	None		
	7/16"x48"x144"	92-3777	OSB	—	2"x16 Gauge Staples	8"@24" Centers	4" o.c. sides + ends	Per&24" o.c.	None	2363	786
T-E Plank/Overlay	5"x47"x96"		Wood	96"	6" 14 Gauge Sip Scr	4/Joist/Panel	8" o.c. sides + ends	T&G+Joist	None		
	7/16"x48"x96"	98030262	OSB	—	2"x16 Gauge Staples	8"@24" Centers	4" o.c. sides + ends	Per&24" o.c.	None	1315	437

NOTES: 1. Adhesive is to meet the requirements of AFG-01. A 3/8" bead of adhesive is to be used. Approximately 50 lin. ft. of adhesive per quart tube.

2. All panels were installed with staggered ends except Tectum I tile with 168 bulb tees and Tectum III tile on truss tees.

3. Specific adhesive used on test assemblies was Miracle Construction adhesive SFA-66.

4. Values over wood joists are conservative when supports are steel.

5. Visit our Web site to download technical bulletin T-77 for more information. Call for assistance when designing and detailing this Tectum roof deck system.