



Thermite Welding Form

MX-TRK-FRM-003

(Publishing Date: May 3, 2024)

Date: _____ **Project Name:** _____ **Weather:** _____
 (Sunny, Cloudy, Windy, Rain, Snow)
Time: _____
Subdivision: _____ **Contractor:** _____ **Temperature:** _____
 (Ambient in °F)

RAIL AND LOCATION INFORMATION

Track ID	Rail (Left or Right*)	Rail Weight (lbs. per yard)	Rail Hardness		Mileage	Coordinates (Decimal Degrees)	
			Rail End One	Rail End Two		Northing	Easting

WELD INFORMATION

Weld ID	Rail Gap (in)	Distance from Edge of Nearest Tie (in)	Vertical Rail Base Offset (mm)	Dye Penetrant Tested	Destress Weld	Rail Puller Used
				<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No

Rail Temperature Pre-Weld (°F)	Pre-Heat Time (Minute)	Tap Time (Second)	Welding Procedure
			<input type="radio"/> Winter <input type="radio"/> Summer

Information Marked on Web of Rail (Gauge Side) Yes **Anchor Pattern (If Hardwood Ties)** _____

Comments:

Foreman Signature: _____

Supervisor Signature: _____

Weld Kit Information	
LOT/Batch #	_____
Batch Date:	_____
Affix Tag if Applicable	

NOTE: The original field copy of the welding form must be signed and submitted.

***Left and right rail is determined when viewing the track in direction of increasing mileage.**



Thermite Welding Critical Task Checklist

Items below to be check marked (✓) if compliant or cross marked (X) if non-compliant. Explanation in the comments section is required for non-compliance. Foreman and Peer to initial each item.

Item	Task	✓/X	Foreman Initials	Peer Initials
Site Preparation	Safety hazards and controls have been reviewed including fire, moisture, snow, and frost.			
Track Preparation	Rail type, weight, and wear is compatible with weld kit and GTTS Section 4.			
	Reference marks (field side) and match marks (gauge side) are made on the base of the rail.			
	Field welds will not be made within 6' of a thermite weld, or within 3' of a flash butt weld.			
	Rail pullers MUST be used on all closure welds if the rail temperature is at or below the PRLT.			
	Rail pullers MUST be used during Cold Weather welding, as defined in the GTTS.			
Rail-end Preparation	Rail end shall not be positioned over a tie nor closer than 4" to a tie or any drilled holes.			
Rail-end Alignment	Standard weld gap is achieved: minimum 1" to maximum 1-1/8" for standard 1" gap welds.			
	Vertical (crown) and horizontal alignment is verified using a 36" straight edge and taper gauge.			
Mold Preparation	Thermite welding kit and crucible has not exceeded their 2-year maximum shelf-life.			
Preheating	During Cold Weather, rail must be warmed up with a turbo torch to 100°F (37.7°C) before or during the preheating procedure.			
	450°F (233°C) achieved on all 4 corners of base.			
Charge Preparation	Tapping thimble in place and secured.			
Pouring	All employees moved to a safe place minimum 40 feet away after charge is ignited for a time of 1 minute after the pour is completed.			
	Normal tap time between 15 to 35 seconds has been achieved.			
De-molding & Shearing	Demolding is not started until 5 minutes from end of pour.			
	Rail pullers not removed until the weld has cooled below 700°F (371°C).			
Hot Grinding	During Cold Weather, weld is covered with cooling blanket or box until weld has cooled below 900°F (483°C).			
Cold Grinding	No grinding of running surface between 600°F (316°C) and 400°F (204°C).			
	Weld is ground to finish tolerances, base risers removed and ground flush with weld collar.			
Finishing	Weld inspected using 36" straight edge and taper gauge.			
	Tamp minimum 2 ties each side of weld plus any others required. Restore ballast around crib and tamped ties.			
	All wood ties glued, and fasteners reinstalled.			
	Weld material removed from site.			
	Work area inspected for any signs of smoke and fires.			
Comments				