

Material

Item	Specification	Fill Capacity
Clear Silicone Rubber TA-32	ESB-M4G92-A	—
Interior Spray Paint PM-19M547-xxxxH	—	—
Metal Bonding Adhesive TA-1	—	—
Motorcraft® Acid Neutralizer ZC-1-A	—	—
Motorcraft® Adhesion Promoter PM-19A316-AA	—	—
Motorcraft® Alkaline Neutralizer ZC-2-A	—	—
Motorcraft® Custom Clear Coat Polish ZC-8-A	—	—
Motorcraft® Detail Wash ZC-3-A	—	—
Motorcraft® Metal Surface Prep ZC-31-A	—	—
Motorcraft® Premium Undercoating PM-25-A	—	—
Motorcraft® Premium Undercoating Quart PM-25-B	—	—
Motorcraft® Rust Inhibitor Aerosol PM-24-A	—	—
Motorcraft® Rust Inhibitor Quart PM-24-B	—	—
Plastic Bonding Adhesive TA-9	—	—
Roof Ditch Sealer TA-15	—	—
Seam Sealer TA-2	—	—
Trim and Weatherstrip Adhesive TA-14-A	—	—

General Equipment
3 Phase Inverter Spot Welder 254-00002
Compuspot 700F Welder 190-50080
I4 Inverter Spot Welder 254-00014
Inverter Welder with MIG Welder 254-00015

General Specifications -Welding Specifications

Item	Specification
Plug Weld Hole	8 mm (0.31 in)
Weld Wire ER70S-3 or equivalent	0.9-0.11 mm (0.035-0.045 in)

Weld Nugget Chart

Test Thickness of Metal (mm)	Nugget Size
0.7 + 0.7	4.3 mm (0.16 in)
0.7 + 0.7 + 0.7	4.3 mm (0.16 in)
0.9 + 0.9	4.7 mm (0.18 in)
0.9 + 0.9 + 0.9	4.7 mm (0.18 in)
1.0 + 1.0	5.2 mm (0.2 in)
1.0 + 1.0 + 1.0	5.2 mm (0.2 in)
2.0 + 2.0	7.1 mm (0.27 in)
2.0 + 2.0 + 2.0	7.1 mm (0.27 in)
3.0 + 3.0	8.7 mm (0.34 in)
3.0 + 3.0 + 3.0	8.7 mm (0.34 in)
3.0 + 0.7	4.3 mm (0.16 in)
0.7 + 3.0 + 1.0	5.2 mm (0.2 in)
2.0 + 2.0 + 0.7	4.3 mm (0.16 in)
0.9 + 0.9 + 2.0	4.7 mm (0.18 in)
2.0 + 0.9 + 1.0	5.2 mm (0.2 in)
1.0 + 3.0 + 1.0	5.2 mm (0.2 in)
3.0 + 1.0 + 2.0	7.1 mm (0.27 in)
0.9 + 0.7 + 0.9	4.3 mm (0.16 in)

Descriptions of Ford Steel Families

Grade	Alloy Content	Heat Treatment	Typical Applications	Comments
Mild steel, bake hardened, solid solution strengthened	Low	Fully annealed/dead soft	Body panels (closures, floor pan, dash panel)	—
High-Strength Low Alloy (HSLA)	Low	Fully annealed/dead soft	Rails, structural members	Strengthened with fine particles and small grain size
Dual Phase Steel (DP)	Medium (Manganese Silicon, Molybdenum Chromium)	Fully annealed/partially hardened	Rails, structural members	15-50% of structure is hard martensite
Ultra High Strength Steel (UHSS) (Martensitic, Boron)	Low	Fully hardened	Rocker reinforcements, door beams, bumper beams	100% of structure is hard martensite

Transformation Induced Plasticity Steel (TRIP) steel	High (Manganese, Phosphorus, Silicon, Aluminum)	Fully annealed/ partially hardened	To be determined	Complex microstructure for high strength and ductility
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Ford Recommended Steel Repairability Matrix

Grade	Trade Descriptions	Welding Method			Cold Repairs	Use of Heat for Repair	Temperature Range	Maximum Heat
		Metal Inert Gas (MIG)	Squeeze-Type Resistance Spot Welding (STRW)	MIG Braze				
Mild Steel	Mild	Yes	Yes	NA	Yes ^a	Yes	Up to 650° C (1,200° F)	90 sec. x 2
Laminate Steel	Quiet steel	No	Yes	No	Yes ^a	NA		
Bake Hardened	BH 180, BH210, BH 250, BH 280	Yes	Yes	Yes ^b	Yes ^a	Yes	Up to 650° C (1,200° F)	90 sec. x 2
Solid Solution Strengthened		Yes	Yes	Yes ^b	Yes ^a	Yes	Up to 650° C (1,200° F)	90 sec. x 2
High-Strength Low Alloy (HSLA)	HSLA 250, HSLA 350, HSLA 550	Yes	Yes	Yes ^b	Yes ^a	Yes	Up to 650° C (1,200° F)	90 sec. x 2
Dual Phase = 600 MPa Ultimate Tensile Strength (UTS)	DP 500, DP 600	Yes	Yes	Yes ^b	Yes ^a	No	NA	NA
Dual Phase = 600 MPa Ultimate Tensile Strength (UTS) particular to 780 and 980 grades) ^c	DP 700, DP 780, DP 900	Yes ^c	Yes	Yes ^b	No	No	NA	NA
Ultra High Strength Steel (UHSS) (Martensitic, Boron) ^e	Boron	Yes ^a	Yes	Yes	No	No	NA	NA
Transformation Induced Plasticity Steel (TRIP)	TRIP 590, TRIP 780, TRIP 980	NA	NA	NA	NA	NA	NA	NA

^a Cold repairs can be performed if damage excludes kinks. May section only if approved procedure in workshop manual

^b MIG braze allowed for non-structural applications only

^c Dual phase steels DP 700, DP 780 and DP 980 must be replaced at factory joints, no sectioning unless approved procedure in workshop manual

^c For DP 980, use MIG plug welding only, no stitch welding

^e Boron components must be replaced at factory joints, no sectioning allowed

