

Ford Recommended Steel Reparability Matrix

Grade	Trade Descriptions	Welding Method			Cold repairs	Use of Heat for repair	Temp. Range	Maximum Heat
		MIG	RSW	MIG Braze				
Mild Steel	Mild	Yes	Yes	NA	Yes**	Yes	Up to 1200 °F (650 °C)	90 sec. x 2
Laminate steel	Quiet Steel	NO	Yes	No	Yes**	NA		
Bake Hardened	BH 180, BH 210, BH 250, BH 280	Yes	Yes	Yes	Yes**	Yes	Up to 1200 °F (650 °C)	90 sec. x 2
Solid Solution-Strengthened		Yes	Yes	Yes	Yes**	Yes	Up to 1200 °F (650 °C)	90 sec. x 2
High Strength, Low Alloy	HSLA 250, HSLA 350, HSLA 550	Yes	Yes	Yes	Yes**	Yes	Up to 1200F (650 °C)	90 sec. x 2
Dual Phase <=600 MPa UTS	DP 500, DP 600	Yes	Yes	Yes	Yes**	No	N/A	N/A
Dual Phase >=600 MPa UTS (particular to 780 and 980 grades)***	DP 700, DP 780, DP 980	Yes#	Yes	YES	No	No	N/A	N/A
UHSS Martensitic Boron****	Bare Boron USIBOR	Yes* Yes*	Yes Yes	Yes Yes	No	No	N/A	N/A
TRIP	TRIP 590, TRIP 780, TRIP 980	NA	NA	NA	NA	NA	N/A	N/A

MIG Braze allowed for non-structural applications only

* Mig Plug Only, NO STITCH WELDING

** Cold repairs can be performed if damage excludes kinks. May section only if Workshop Manual procedure allows.

***Dual phase Steels DP 700, DP 780, and DP 980 must be replaced at factory joints, no sectioning unless Workshop Manual Procedure approves.

#For DP980, use Mig Plug only, no stitch welding.

**** Boron components must be replaced at factory joints, no sectioning allowed.

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, etc.)	
High Strength Low Alloy (HSS)	Low	Fully Annealed/Dead Soft	Rails, Structural Members	Strengthened with fine particles and small grain size
Dual Phase (DP)	Medium (Manganese, Silicon, Molybdenum, Chromium)	Fully Annealed/Partially Hardened	Rails, Structural Members	15-50% of structure is "hard" martensite
Ultra High Strength Steel (Martensitic, Boron) (UHSS)	Low	Fully Hardened	Rocker reinforcements, door beams, bumper beams	100% of structure is "hard" martensite
TRIP (Transformation Induced Plasticity) Steel	High (Manganese, Phosphorus, Silicon, Aluminum)	Fully Annealed/Partially Hardened	TBD	Complex microstructure for high strength and ductility