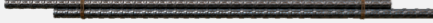







SPLICE TYPE	MECHANISM OF LOAD TRANSFER	TYPICAL APPLICATIONS	ADVANTAGES	LIMITATIONS
TRADITIONAL LAPPED SPLICE 	Bond between reinforcing bar and surrounding concrete over the lap length. Forces are transferred from one bar to the concrete and then into the adjacent bar.	<ul style="list-style-type: none"> General cast-in-place construction Slabs, walls, footings, lightly reinforced elements Applications where sufficient lap length and cover are available 	<ul style="list-style-type: none"> Simple and familiar method No special equipment required Low material cost Advance rebar scheduling not required Easy inspection 	<ul style="list-style-type: none"> Requires long splice lengths Causes reinforcement congestion Increased steel consumption Performance dependent on concrete quality and confinement Not ideal for heavily reinforced areas
WELDED LAP SPLICE 	Direct metallurgical bond between overlapping bars through weld material. Load is transferred through the weld and overlapping reinforcement.	<ul style="list-style-type: none"> Prefabrication Pile cages, column starter bars Retrofit works Situations where reduced lap lengths are desired 	<ul style="list-style-type: none"> Shorter than conventional laps Can reduce reinforcement congestion No proprietary couplers required Advance rebar scheduling not required Suitable for prefabrication 	<ul style="list-style-type: none"> Requires qualified welders and QA/QC Welding can affect bar properties if not controlled Site welding can be weather dependent Inspection and testing may be required
THREADED SPLICE 	Mechanical transfer through precision-cut or rolled threads into the coupler sleeve.	<ul style="list-style-type: none"> Critical structural elements High-rise construction Infrastructure applications Precast construction High-volume fabrication facilities Columns, walls and heavily reinforced members 	<ul style="list-style-type: none"> Develops full bar strength Compact splice length Minimal reinforcement congestion Suitable for prefabrication Skilled labour not required for site installation 	<ul style="list-style-type: none"> Requires off-site bar-end preparation (threading) Advance rebar scheduling required Higher material cost Requires careful thread protection during handling Bar rotation or special couplers may be required Special couplers required when used with bent rebar or cages
SWAGED COUPLER SPLICE 	Mechanical interlock created by plastically deforming the coupler onto the reinforcing bar. Load is transferred through friction, then through the precision-cut or rolled threads of the two couplers.	<ul style="list-style-type: none"> Critical structural elements High-rise construction Infrastructure applications Precast construction High-volume fabrication facilities Columns, walls and heavily reinforced members 	<ul style="list-style-type: none"> Develops full bar strength Compact splice length Minimal reinforcement congestion Suitable for prefabrication Typically higher quality threads than threaded splices Skilled labour not required for site installation 	<ul style="list-style-type: none"> Requires off-site bar-end preparation (threading) Advance rebar scheduling required Higher material cost Requires careful thread protection during handling Bar rotation or special couplers may be required Special couplers required when used with bent rebar or cages
FRICTION WELDED COUPLER SPLICE 	Solid-state metallurgical bond created by rotational friction and pressure between bar ends and couplers. Load is transferred directly through the welded connection into the coupler, then through the precision-cut or rolled threads of the couplers themselves.	<ul style="list-style-type: none"> Critical structural elements High-rise construction Infrastructure applications Precast construction High-volume fabrication facilities Columns, walls and heavily reinforced members 	<ul style="list-style-type: none"> Develops full bar strength Compact splice length Minimal reinforcement congestion Suitable for prefabrication Typically higher quality threads than threaded splices Skilled labour not required for site installation 	<ul style="list-style-type: none"> Requires off-site bar-end preparation (threading) Advance rebar scheduling required Higher material cost Requires careful thread protection during handling Bar rotation or special couplers may be required Special couplers required when used with bent rebar or cages
FORTIS BOLT COUPLER SPLICE 	Mechanical bearing and interlock created by lock-shear bolts that embed into the bar ribs. Load is transferred through the coupler body and bolts without bar-end preparation.	<ul style="list-style-type: none"> Existing construction Retrofit and strengthening works Pile extensions Precast connections Congested reinforcement zones Applications where bar rotation is not possible Splicing of prefabricated rebar cages 	<ul style="list-style-type: none"> Develops full bar strength Off-site bar-end preparation not required Advance rebar scheduling not required Proprietary machinery not required Ideal for retrofit applications Can join bent, fixed or inaccessible bars Performance is independant of concrete quality 	<ul style="list-style-type: none"> Higher material cost than laps Requires correct installation procedure Installation access required around coupler Special tooling required for larger bar diameters

SPLICE TYPE	OFF-SITE BAR-END PREPARATION REQUIRED	ADVANCE REBAR SCHEDULING REQUIRED	RETROFIT / REMEDIAL APPLICATIONS	PRE-BENT REBAR APPLICATIONS	PREFABRICATED REBAR CAGES	TYPICAL SPLICE LENGTH
TRADITIONAL LAPPED SPLICE	NO	NO	POOR	EXCELLENT	EXCELLENT	LONG
WELDED LAP SPLICE	NO	NO	EXCELLENT	GOOD	GOOD	MEDIUM
THREADED SPLICE	YES	YES	POOR	SPECIAL COUPLERS REQUIRED	SPECIAL COUPLERS REQUIRED	SHORT
SWAGED COUPLER SPLICE	YES	YES	POOR	SPECIAL COUPLERS REQUIRED	SPECIAL COUPLERS REQUIRED	MEDIUM
FRICTION WELDED COUPLER SPLICE	YES	YES	POOR	SPECIAL COUPLERS REQUIRED	SPECIAL COUPLERS REQUIRED	SHORT
FORTIS BOLT COUPLER SPLICE	NO	NO	EXCELLENT	EXCELLENT	EXCELLENT	MEDIUM