

ASTM F3125/F3125M - Structural bolts

Technical reference sheet | Rev. 29.09.2026

From grade to assembly configuration: Heavy Hex bolts and Twist-Off assemblies, with dedicated A325 and A490 grades.

A325 or A490: key differences

Characteristic	A325	A490
Product	Heavy Hex	Heavy Hex
Minimum tensile strength · inch series	120 ksi	150 ksi
Current specification	F3125/F3125M	F3125/F3125M
Specify	Type, dimensions, nut, washer, finish	Type, dimensions, nut, washer, permitted coating

A490 is not an automatic replacement for A325. Joint resistance, ductility, components and installation must match the design. These values are neither allowable stresses nor tightening torques.

Heavy Hex, Twist-Off and Type

Heavy Hex identifies the head geometry. F1852 and F2280 identify Twist-Off configurations within F3125. Type 1 and Type 3 distinguish material types; Type 3 concerns weathering steel, not stainless steel.

Dimensions, thread and tightening

The inch Heavy Hex series covers diameters from ½" to 1½". Select length and thread position for the joint thickness and shear plane. Specify the required dimensional standard; A325M/A490M are not nominal conversions of inch products.

Nuts, washers and coatings

Specify ASTM A563 nuts and ASTM F436 washers compatible with grade, Type and finish. A coating used for A325 is not automatically permitted for A490. For pretensioned joints, request the assembly and relevant installation instructions.

Grade, type and style are separate fields

Identify the standard and edition, grade, type, style and dimensional system. Metric and inch configurations are maintained separately.

Twist-Off assemblies

F1852 and F2280 designations lead into the F3125 structure rather than duplicate pages presented as independent current specifications. Request the complete assembly specified for the project.

Grade 144: identify the specification

The 26 edition also covers the 144 ksi strength level. This does not establish equivalence with F3148: the specification and assembly configuration must be identified separately.

Project-specific documentation

Assembly and traceability

Lot, markings, component list and conformity documents relevant to the supply.

EN 10204 3.1 · DoP · CoC

State the required documents. Applicability and availability are confirmed during enquiry review.

Testing and coatings

Dimensional reports, mechanical tests, coating reports and ROCAP where applicable to the specification.

Related standards and components

A325 is handled as a grade within ASTM F3125/F3125M, with nut, washer and finish requirements captured in the enquiry.

A490 bolting: coating, components and documentation are assessed against the applicable specification rather than inherited from A325.

Nuts for structural and mechanical enquiries, including Grade DH where specified by the project.

Hardened washers for specified assemblies, with type, dimensions and finish maintained as separate parameters.

Fixed-spline assemblies: identify the bolt, nut, washer arrangement and installation requirements together.

Application sectors

Steelwork, structures and infrastructure.

Enquiries and supply

Specify standard, grade, dimensions, finish, quantity and required documents. This technical reference sheet does not replace the lot documentation, manufacturer installation instructions or project design.