TM-110.3 CASTINGS

Cast material may be used in the construction of vessels and vessel parts. Specifications for acceptable casting materials are listed in Tables TM-130.2-1 through TM-130.2-7 and the maximum allowable stress values in Section II, Part D. Castings shall be of wrought materials and conform to the requirements for bars or bolting in the applicable section elsewhere in this Code (see TM-150.4).

(4) particular consideration shall be given to any dynamic loadings

TM-110.7 NUTS AND WASHERS

(a) Nuts shall conform to the requirements in the applicable CETTLEWELSEWHERE IN THIS CODE (see TM-150.1, TM-150.2, and TM-160.2). They shall engage the threads for the full depth of the nut.

(b) The use of washers is optional. When used, they shall be of wrought materials.

TM-110.8 RODS AND BARS

Rod and bar stock may be used in the vessel construction for pressure parts such as flange rings, stiffening rings, frames for reinforced openings, stays and staybolts, and similar parts. Rod and bar materials shall conform to the requirements for bars or bolting in the applicable section elsewhere in this Code (see TM-150.4).

TM-110.9 FERRITIC STEELS WITH TENSILE PROPERTIES ENHANCED BY HEAT TREATMENT

Except when specifically prohibited by Part TM (see TM-180.2 and TW-130.7), steels listed in Table TM-130.2-6 may be used for the entire vessel or for individual components that are joined to other Grades listed in that Table or to other steels conforming to the specifications in Tables TM-130.2-1 or TM-130.2-2. The maximum allowable stress values for the materials listed in Table TM-130.2-6 are given in Section II, Part D.

TM-110.10 PREFABRICATED OR PREFORMED PRESSURE PARTS FURNISHED WITHOUT A CERTIFICATION MARK

(a) Prefabricated or preformed pressure parts for pressure vessels that are subject to stresses due to pressure loads by others instead of the Manufacturer of the completed vessel shall conform to all applicable requirements such as TF-310.1(c), TF-410.4, TF-510.1 and TF-610.1.

However, the Manufacturer of the completed vessel or Certification Mark-stamped part shall ensure that parts furnished under the provisions of (b), (c), (d) and (e) meet all of the applicable Code requirements such as TF-310.1(c), TF-410.4, TF-510.1 and TF-610.1.

(b) Studs shall be threaded full length or shall be machined down to the root diameter of the thread in the unthreaded portion, provided that the threaded portions are at least 1 1/2 diameters in length. Studs greater than eight diameters in length may have an unthreaded portion that has the nominal diameter of the thread, provided the following requirements are met:

(1) the threaded portions shall be at least 1 1/2 diameters in length

(2) the stud shall be machined down to the root diameter of the thread for a minimum distance of 0.5 diameters adjacent to the threaded portion

(3) a suitable transition shall be provided between the root diameter and the unthreaded portion

(4) particular consideration shall be given to any dynamic loadings

(5) the use of washers is optional. When used, they shall be of wrought materials.

(6) Rod and bar stock may be used in the vessel construction for pressure parts such as flange rings, stiffening rings, frames for reinforced openings, stays and staybolts, and similar parts. Rod and bar materials shall conform to the requirements for bars or bolting in the applicable section elsewhere in this Code (see TM-150.4).

TM-110.11 PREFABRICATED OR PREFORMED PRESSURE PARTS FURNISHED WITHOUT A CERTIFICATION MARK

(a) Prefabricated or preformed pressure parts for pressure vessels that are subject to stresses due to pressure loads by others instead of the Manufacturer of the completed vessel shall conform to all applicable requirements such as TF-310.1(c), TF-410.4, TF-510.1 and TF-610.1.

However, the Manufacturer of the completed vessel or Certification Mark-stamped part shall ensure that parts furnished under the provisions of (b), (c), (d) and (e) meet all of the applicable Code requirements such as TF-310.1(c), TF-410.4, TF-510.1 and TF-610.1.

(b) Studs shall be threaded full length or shall be machined down to the root diameter of the thread in the unthreaded portion, provided that the threaded portions are at least 1 1/2 diameters in length. Studs greater than eight diameters in length may have an unthreaded portion that has the nominal diameter of the thread, provided the following requirements are met:

(1) the threaded portions shall be at least 1 1/2 diameters in length

(2) the stud shall be machined down to the root diameter of the thread for a minimum distance of 0.5 diameters adjacent to the threaded portion

(3) a suitable transition shall be provided between the root diameter and the unthreaded portion

(4) particular consideration shall be given to any dynamic loadings

(5) the use of washers is optional. When used, they shall be of wrought materials.

(6) Rod and bar stock may be used in the vessel construction for pressure parts such as flange rings, stiffening rings, frames for reinforced openings, stays and staybolts, and similar parts. Rod and bar materials shall conform to the requirements for bars or bolting in the applicable section elsewhere in this Code (see TM-150.4).