WB-3112 Design Loadings

The Design Loadings shall be established in accordance with WA-2123.1 and the following subparagraphs.

WB-3112.1 Design Pressure.

The specified internal and external Design Pressures to be used in this Subsection shall be established in accordance with WA-2123.1(a).

WB-3112.2 Design Temperature.

The specified Design Temperature shall be established in accordance with WA-2123.1(b). It shall be used in computations involving the Design Pressure and the coincidental Design Mechanical Loads. If necessary, the metal temperature shall be determined by computation using accepted heat transfer procedures or by measurement from equipment in service under equivalent operating conditions. In no case shall the temperature of the metal exceed the maximum temperature listed in the applicability column of Tables 2A, 2B, and 4, Section II, Part D, Subpart 1, nor exceed the maximum temperature limitations specified elsewhere in this Subsection.

WB-3112.3 Design Mechanical Loads.

The specified Design Mechanical Loads shall be established in accordance with WA-2123.1(c). They shall be used in conjunction with the Design Pressure.

WB-3112.4 Design Stress Intensity Values.

(a) Design stress intensity values for Section III, Class TC materials listed in Tables 2A, 2B, and 4, Section II, Part D, Subpart 1 shall be used. The materials shall not be used at temperatures that exceed the temperature limit established in the stress tables. The stress intensity values in the tables may be interpolated for intermediate temperatures. As an additional control on permitted transportation containment materials listed in Tables 2A and 2B, only the following materials shall be used:

(1) materials whose P-numbers are listed in Table WB-4622.1-1, or
(2) ductile cast iron castings per specifications SA-874 and SA/JIS G5504 of Table 2A, Section II, Part D, Subpart 1

(b) The design of a containment shall be determined so that the primary membrane and primary membrane plus bending stress intensities due to any combination of Design Loading does not exceed the maximum design stress intensity value permitted at the Design Temperature. These design stress intensity values may be interpolated for an intermediate Design Temperature.

WB-3113 Operating and Test Conditions

(a) Transportation containments (WA-1110) are subject to operating and test conditions that are required to be considered in the design of the containment in order to satisfy applicable safety criteria.

(b) The selection of operating and test conditions is beyond the scope of this Division. The Design Specification shall specify these conditions using appropriate guidance from safety criteria documents for transportation containments and the requirements of regulatory and enforcement authorities having jurisdiction.
(c) weight of the containment and normal contents under operating or test conditions, including additional pressure due to static and dynamic head of liquids
(d) superimposed loads such as other components, operating equipment, impact limiting devices, shielding, and linings
(e) external environments such as wind loads, snow loads, vibrations, handling loads, and earthquake loads, where specified
(f) reaction loads from attachments and supports
(g) temperature effects caused by contents or the external environment

WC-3112  Design Loadings

The Design Loadings shall be established in accordance with \textit{WA-2123.1} and the following Subparagraphs.

WC-3112.1  Design Pressure.

The specified internal and external Design Pressures to be used in this Subsection shall be established in accordance with \textit{WA-2123.1(a)}.

WC-3112.2  Design Temperature.

The specified Design Temperature shall be established in accordance with \textit{WA-2123.1(b)}. It shall be used in conjunction with the Design Pressure. If necessary, the metal temperature shall be determined by computation using accepted heat transfer procedures or by measurement from equipment in service under equivalent operating conditions. In no case shall the temperature at the surface of the metal exceed the maximum temperature listed in the applicability column of Tables 2A, 2B, and 4, Section II, Part D, Subpart 1, nor exceed the maximum temperature limitations specified elsewhere in this Subsection.

WC-3112.3  Design Mechanical Loads.

The specified Design Mechanical Loads shall be established in accordance with \textit{WA-2123.1(c)}. They shall be used in conjunction with the Design Pressure.

WC-3112.4  Design Allowable Stress Intensity Values.

Design stress intensity values for Section III, Class SC materials listed in Tables 2A, 2B, and 4, Section II, Part D, Subpart 1 shall be used. The materials shall not be used at temperatures that exceed the temperature limit established in the stress tables. The stress intensity values in the tables may be interpolated for intermediate temperatures. As an additional control on permitted storage containment materials listed in Tables 2A and 2B, only the following materials shall be used:
(a) materials whose P-numbers are listed in Table WC-4622.1-1, or
(b) ductile cast iron castings per specifications \textit{SA-874} and \textit{SA/JIS G5504} of Table 2A, Section II, Part D, Subpart 1

WC-3113  Operating and Test Conditions

(a) Storage containments (WA-1110) are subject to operating and test conditions that are required to be considered in the design of the containment in order to satisfy applicable safety criteria.