

ASME Code Case 2901, Division 1 UG-44(b) and Division 2

4.16.12

Implementation in NextGen of ASME Code Case 2901 and subsequent paragraphs Division 1 UG-44(b) and Division 2 4.16.12.

Online version: <https://nextgen.sant-ambrogio.it/KB463027>

Latest update: 17 lug 2018

The new [Code Case 2901](#) has recently been approved by ASME, which allows checking the ratings of the ANSI B16.5 and B16.47 standard welding neck flanges when there are localized loads.

Warning: starting from the 2019 edition of the BPVC, the Code Case 2901 has been integrated directly into the text of the code in UG-44(b) for section VIII Division 1 and in 4.16.12 for Division 2. The option has been moved in NextGen to the Loads category in the Item Properties window.

Note that the program already automatically calculates an equivalent pressure that takes into account external loads. To use the new method provided by the Code Case, however, it is sufficient to enable the appropriate option among the properties of the item, as shown in the figure:

Item Properties	
Vessel Operating conditions	
Item name	#5359
Calculation code	Asme VIII Div. 1 Ed. 2017
Reference publication	Metric
Item description	
Input data units	MPa, °C, mm
Default bolt type	ANSI
Default standard for nozzle flanges	ANSI B16.5 / 16.47
Default gasket for nozzle flanges	Spiral-wound metal, mineral fiber filler - Carbon steel Gaskets
Use a default set of materials	<input checked="" type="checkbox"/>
Set of materials	C, CMn, CMnSi
Service	Not specified
Lethal service	<input type="checkbox"/>
Use Code Case 2286-5 for external pressure calculation	<input type="checkbox"/>
Use Code Case 2901 to evaluate external loads on WN flanges	<input checked="" type="checkbox"/>
General Geometry Tests Location Jacket Insulation Wind Seism Loads Reporting Options	
<input type="button" value="Update"/> <input type="button" value="Cancel"/>	

The result of the calculation will be indicated in a special section of the report of the standard flanges for which external loads have been specified in the "External loads" section:

Welding neck flange "Nozzle #1 Flange"

General Design conditions Geometry Bolts Gasket Standard flange External loads Weight Reporting

Nozzle #1 Flange

Area exposed to wind	11064,6	mm ²
Shape coefficient	<i>cf</i> 1	
External tensile net-section axial force	<i>FA</i> 0	N
External tensile net-section bending moment	<i>ME</i> 0	N-mm
External tensile net-section axial force (test condition)	<i>FA_t</i> 0	N
External tensile net-section bending moment (test condition)	<i>ME_t</i> 0	N-mm

Note that the Code Case applies only to welding neck flanges and, for similarity, to long welding neck flanges.