

## Synopsis of API 610, 12<sup>th</sup> Edition (Major changes wrt 11<sup>th</sup> Edition)

API 610, the standard specifies requirements for Centrifugal Pumps, including pumps running in reverse as hydraulic power recovery turbines (HPRTs), for use in petroleum, petrochemical, and gas industry process services. Latest 12<sup>th</sup> Edition has just been released in the last week of January, 2021.

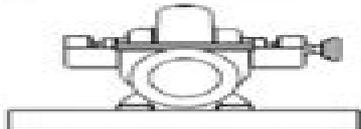
Key features and major changes of 12<sup>th</sup> edition, are highlighted in this write up with the objective to support Pump professionals with quick overview who already know about the API 610, 11<sup>th</sup> edition, which is 10 years old. Deliberately, I have avoided to discuss on interpretation, implications and effect of these changes to OEM or Purchaser. This is not a complete highlight of 12<sup>th</sup> edition. You may not find many fundamental and important recommendations in this article, if those are the same as 11<sup>th</sup> edition. Reference of API section is provided in parenthesis. Of course, this list is selective, not exhaustive.

### • Basic Overview

Section	API 610 11 <sup>th</sup> Edition	API 610 12 <sup>th</sup> Edition
TOC	Total 10 Main sections + Annexures from A to O	Total 10 Main Sections + Annexures from A to O
Additional annexure	Annex O: API regional annexure	Figure N3: <b>Data list</b> , provide summary of all the field of API datasheet with page number reference Annex O: (informative) <b>Special-purpose Centrifugal Pumps</b> .
Released in	September 2010	January 2021
Total Pages	205	223

Acronyms and Abbreviations are provided with around 60 items (Ref. 3.2)

### • Pump Classification (Ref. 4.2, Table 1)

API 610 11 <sup>th</sup> Edition	API 610 12 <sup>th</sup> Edition
<p>One or Two stage, Axial split between bearing pump is called BB1</p>  <p style="text-align: center;">Figure 7 — Pump type BB1</p>	<p>BB1 is with two variants. Foot mounted → <b>BB1-A</b> Near centerline mounted → <b>BB1-B</b></p> <p>For BB2 and BB3, Requirement of Centerline supported is added.</p>  <p style="text-align: center;">a) Pump Type BB1-A: Foot Mounted</p>  <p style="text-align: center;">b) Pump Type BB1-B: Near-centerline Mounted</p>

### • Basic design and selection (Ref. 6.1)

No major changes in the 12<sup>th</sup> edition as far as core design features of pump is concerned. Additional requirement focusing on improved equipment reliability are addressed below. Requirement of field proven record and API 691 is introduced

Section	API 610, 11th edition	API 610, 12th edition, different or additional requirement
Reliability concept	Shall be designed and constructed of 20 years and at least 3 years of uninterrupted operation.	Only equipment that is <b>field proven</b> , as defined by the Purchaser, is acceptable, <b>API 691</b> can provide guidance on this. In the event no such equipment is available, the vendor shall submit an explanation of how their proposed equipment can be considered field proven. The vendor shall advise in the proposal any <b>component designed for a finite life</b> .
Parallel Operation		The purchaser shall specify if equipment will be supplied in accordance with API 691. Additional recommendations: the head values of the pumps at any given flow within the preferred operating range shall be <b>within 3 % of each other</b> for pumps larger than 3 in. (80 mm) discharge.
Curve Shape		Pumps with a continuously rising head curve are preferred for all applications, but this is not possible with all pump types. Head curve shape is dependent on several factors specific to the pumps hydraulic design.
End of curve	Not available	The <b>end of curve flow</b> is defined as <b>120 % of the BEP flowrate</b> .
Viscosity correction	performance corrected in accordance with ISO/TR 17766	performance corrected in accordance with <b>HS 9.6.7</b> . Both the standards are equivalent.

# Api 62latest Edition

**Michael Rajnik**



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