

Reference No: CABF-R-045	Conformity Assessment Bodies Forum PED/SPVD (CABF) CABF
Relation to PED: PED Annex I 3.2.2 PED Annex III	CABF Recommendation
Question:	Where an assembly consists of items of pressure equipment already tested (hydrostatically pressure tested and CE marked (where applicable)). Does the integration test of the assembly, consisting of a leak test, need to be witnessed by the EU-CAB as part of the “proof test”?
Answer:	Attendance of the EU-CAB at the final proof test is specified in PED Annex III, according to the applicable Conformity Assessment Module. For the purpose of assessing the risks, the EU-CAB may classify the connections to be tested according to article 4 and Annex II PED Annex II. Where joints are classified as article 4.3, or Cat I, the Notified Body may take into account leak tests performed by the manufacturer to decide on attending the leak testing or verify the test results based on the records which are provided by the manufacturer. Where leakage poses a pressure hazard, the test on leak tightness is to be considered part of the final proof test.
Reason:	A final proof test is intended to; • <u>verify tightness.</u> • detect defects (e.g. due to faulty welding filler material, improper material selection) • detect areas with insufficient strength, e.g. defects in base material of moldings or semi-finished products (incorrect forming or heat treatment) • establish a beneficial residual stress field. (source: <i>the Principles for the Assessment of Assemblies (version 17)</i>) for an assembly containing equipment already subjected to a conformity assessment, only the first bullet remains applicable. Reference is made to guideline C-07 where the following reasoning is given for “items” of pressure equipment, of the purpose of this situation, the word “item is replaced by “joint” <i>According to article 14 paragraph 6 (a) the global conformity assessment procedure shall comprise assessment of each item of pressure equipment making up the assembly and referred to in Article 4 (1) which has not been previously subjected to a conformity assessment procedure and to a separate CE marking.</i> <i>The assessment procedure shall be determined by the category of the “joint”, which may be based on the conditions of the assembly.</i> For welded joints, Guideline C-15 indicates the joint can be categorised by the diameter of the connection and Applying this method to non-permanent joints, it follows that for joints categorised as article 4.3 or category I, the notified body may take into account leakage tests performed by the manufacturer. Considerations that have influenced the before mentioned justification:

	<u>From PED Annex I: 3.2.1 Final inspection</u> <i>“Test carried out during manufacture may be taken into account...”</i> <u>From PED Annex I: .2.2. Proof test</u> <i>“Final assessment of pressure equipment shall include a test for the pressure containment aspect.”</i> A Leak test is considered to be part of the proof test to confirm pressure containment yet is not by itself a proof test. Leakage through non-permanent joints does not cause a pressure hazard in most cases, although it may result in a hazard based upon the properties of the released fluids. (i.e. fluid group 1, fire, explosion, or toxicity) Since non- permanent joints are often disconnected after testing and before transportation, or during its service life, a leak test only confirms leak tightness at one moment in time, where a strength test has value for the entire service life of the pressure vessel. <u>Guideline E-03 on leakage of pressure equipment:</u> All hazards arising from pressure shall be assessed for the intended use and the intended contained fluid(s) <u>Guideline C-15 on categories of permanent joints in Cat I or SEP.</u> There is no requirement for the Notified Body to witness a proof test of those joints. <u>From the Principles for the Assessment of Assemblies (version 17):</u> The final proof test is intended to; • <u>verify tightness.</u> • detect defects (e.g. due to faulty welding filler material, improper material selection) • detect areas with insufficient strength, e.g. defects in base material of mouldings or semi-finished products (incorrect forming or heat treatment) • establish a beneficial residual stress field. 6.2.3.2.4 Tie-in welds, golden welds and similar connections: Second bullet: If ... connections are non-permanent (e.g. flanged, threaded) connections, a leak tightness test may be acceptable. If special requirements for tightness exist (e.g. dangerous fluid), the leak test shall be carried out with an appropriate high pressure and application of adequate sensitive leak detection methods.
Original Reference:	TRG 162 Rev 1
Approved by CABF on: 2024-06-04/05	
Note:	