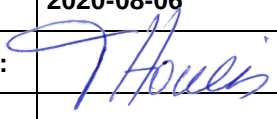
ExNB	Co-ordination of Notified Bodies Directive 2014/34/EU of the European Parliament and of the Council (ATEX) *Equipment and protective systems intended for use in potentially explosive atmosphere*	Clarification Sheet ExNB/CS/019

Status:	**Step*5.2.1**	**Initial proposal by**	BAM	**Date:**	**2000-03-30**
	Step 5.2.3		BAM		**2000-03-30**
	Step 5.2.3				**2020-05-11**

Step refers to ExNB Rules

Flame arresters (autonomous protective systems) assessment of test results obtained under instable detonation conditions

Authorised by Chairman:	**Shearman**	**Date:**	**2001-06-15**
Confirmed by Chairman: (Step*5.2.5)	**Dr. Thedens**	**Date:**	**2016-05-27**
Confirmed by Chairman: (Step*5.2.5)	**Mr. Houeix**	**Date:**	**2020-08-06**
		Signature:	
Former number of document:	**ExNB/00/093/CS**		

Background information
In-line instable detonation flame arresters shall prevent flame transmission caused by deflagrations, stable and instable detonations. Instable detonations area specific hazard requiring higher performance flame arresters than for stable detonations.

Question
Is it possible to certify an in-line instable detonation flame arrester (autonomous protective system) conformity with the Essential Health and Safety requirements of Directive 2014/34/EU if it fails in one the five required instable detonation tests, which are identified by an extremely high detonation pressure?

Answer
No. The European Standard EN ISO 16852 “Flame arresters - Performance requirements, test methods and limits for use” (issue 2016) describes in chapter 7.3.3.4 und 7.3.3.5 the test method for instable detonation. This chapter requires that the flame arrester has to withstand five tests under instable detonation conditions. For these tests, only the lower limit of the detonation pressure, which has to be reached in the test as minimum, is defined but not an upper limit. The authors of the standard made this predefinition because there is not any safe knowledge about the possible maximum pressure in the transition zone between deflagration and stable detonation.

Subject:	**Directive, 2014/34/EU Article No.**	
	Directive, ESR No.	
	Directive, Module Annex No.	
	Standard, No.	

This ExNB Interpretation/Clarification Sheet has the sole purpose of clarifying the application of the EN Standards and/or of the requirements of Directive 2014/34/EU and related documents. It does not in any way change the content of the standards and/or of the requirements. It remains valid until an official answer is received from the European Commission of the relevant standardization bodies.