

## Prevention of Explosions for Thermoprocessing Equipment

Thermoprocessing equipment is described as under:

Industrial thermoprocessing equipment (IThE) is machinery in accordance to the EU-machinery directive (2006/42/EG) Article 1 paragraph 2.

Thus the safety-related design of IThE has to accomplish the requirements of the EU-machinery directive (MD). These requirements for IThE are specified in the harmonized and mandated EN 746 series (C-standard in sense of the MD).

A definition of the term thermoprocessing equipment is given in EN 746 part 1 (Common Safety Requirements for Industrial Thermoprocessing Equipment) under paragraph 3 for various ranges of application. Process engineering-related examples for IThE in various industrial areas are given in Annex A of EN 746 part 1.

Remark: Thermoprocessing equipment which complies to the declaration of conformity included in the MD is given a CE-marking once being placed on the European market (CEN-member states). In addition to the MD and depending on the type of construction, additional EU directive(s) may apply, i.e.:

Directive	Reference	Application as of	Application obligation
Electromagnetic Compatibility	2014/30/EU	89/336/EWG 2004/108/EG	20.04.2016
Simple pressure vessels	2014/29/EU	2009/105/EG 87/404/EWG	20.04.2016
Pressure Equipment Directive (PED)	2014/68/EU	97/23/EG	19.07.2016

In these cases the requirements of the respective directive(s) have to be observed as well.

Principally, it can be stated that CE-marked machinery guarantees to a customer compliance with all European directives applicable for IThE.

The manufacturer is legally obliged to verify whether a directive is applicable for his product or not.

The same holds true for the EU-directive 2014/34/EU (ATEX).



In general, thermoprocessing equipment is not intended for the use in explosive atmospheres.

Thus they are not subject to the requirements of the EU-directive 2014/34/EU (equipment and protective systems intended for use in potentially explosive atmospheres).

Independently from this, thermoprocessing equipment has to fulfil the safety requirements of the EU directive 2014/34/EU (machinery directive) and especially the requirements according to annex 1, paragraph 1.5.7 (prevention of explosions).

In order to avoid explosive atmospheres in thermoprocessing equipment, precautions by means of the respective monitoring technology have to be taken if required.

If there is an explosive atmosphere inside a thermoprocessing plant and if there is an own potential source of ignition (i.e. hot surface), the required safety technology has to be installed. Products which are used inside and which are having an own potential source of ignition have to comply with the requirements of 2014/34/EU. The modules of the declaration of conformity for machinery have to be consulted according to the categories in question.

Association for Thermo Process Technology,  
VDMA/CECOF Frankfurt

Copyright: VDMA/CECOF, Frankfurt/ Main, Germany, 2017