PD CEN/TR 15339-4:2014

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Thermal spraying — Safety requirements for thermal spraying equipment

Part 4: Gas and liquid fuel supply

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee STI/40, Thermal spraying and thermally sprayed coatings.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

This document (CEN/TR 15339-4:2014) has been prepared by Technical Committee CEN/TC 240 “Thermal spraying and thermally sprayed coatings”, the secretariat of which is held by DIN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

CEN/TR 15339, *Thermal spraying - Safety requirements for thermal spraying equipment* is composed of the following parts:

— *Part 1: General requirements*

— *Part 2: Gas control units* (published as a European Standard)

— *Part 3: Torches for thermal spraying and their connection and supply units*

— *Part 4: Gas and liquid fuel supply*

— *Part 5: Powder and wire feed units*

— *Part 6: Spray booth, Handling system, Dust collection, Exhaust system, Filter*

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1 Scope

This Technical Report specifies safety requirements of equipment for thermal spraying, in this case of gas supply including supply of liquid fuels. It deals with safety requirements for storage and the high pressure piping system from storage to the gas control unit or pressure regulator equipment. Safety requirements for gas hoses, hose assembly and torches are presented in CEN/TR 15339-3.

This document should be used in conjunction with CEN/TR 15339-1, which deals with general aspects of designing, manufacturing, and/or putting into service of machines or equipment and with the responsibility to issue the CE Conformity Declaration.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 657, *Thermal spraying — Terminology, classification*

EN 15339-2, *Thermal spraying — Safety requirements for thermal spraying equipment — Part 2: Gas control units*

EN ISO 3821, *Gas welding equipment — Rubber hoses for welding, cutting and allied processes (ISO 3821)*

CEN/TR 15339-1, *Thermal spraying — Safety requirements for thermal spraying equipment — Part 1: General requirements*

CEN/TR 15339-3, *Thermal spraying — Safety requirements for thermal spraying equipment — Part 3: Torches for thermal spraying and their connections and supply units*

CEN/TR 15339-6, *Thermal spraying — Safety requirements for thermal spraying equipment — Part 6: Spray booth, Handling system, Dust collection, Exhaust system, Filter*

3 Function of thermal spraying equipment

3.1 General

Thermal spraying processes are described and schematically represented in EN 657.

Thermal spraying processes as flame, plasma or HVOF (high velocity oxygen fuel) spraying use inert, flammable and oxidizing gases which possess a significant potential of danger. Oxygen is considered as a dangerous gas because hardly inflammable material will burn in the presence of a certain concentration of oxygen.

Pressurised air, nitrogen, or carbon dioxide (CO_2) are applied for cooling the substrate's surface or the part to be sprayed. Fuel gases and oxygen are used for fusing of sprayed coatings made out of self fluxing alloys.

For such applications, an appropriate and safe supply shall be ensured by gases from manifold cylinder banks, cryogenic gas tanks or public piping systems (natural gas).

The installation of the gas delivery system, taken in conjunction with control measures, such as gas detection flow rates, and interlocking of the thermal spray equipment, forms a crucial part of the HAC. The respective class shall be considered. For details, see CEN/TR 15339-1 and CEN/TR 15339-6.

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