SLOVENSKI STANDARD
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Pirotehniļ ni izdelki za vozila - Pregled programa dela za standarde EN, ki jih pripravlja CEN/TC 212 WG 4

Pyrotechnic articles for vehicles - Overview on work program for EN standards to be developed by CEN/TC 212 WG 4

Pyrotechnische Gegenstände für Fahrzeuge - Überblick über harmonisierte Normen, die von CEN/TC 212/WG 4 erarbeitet werden

Articles pyrotechniques pour véhicules - Vue d'ensemble du programme pour le développement de normes européennes

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Foreword

This document (CEN/TR 15970:2009) has been prepared by Technical Committee CEN/TC 212 “Pyrotechnic articles”, the secretariat of which is held by NEN.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Introduction

Mandate M\416 is issued by the European Commission to CEN. The main reason for this mandate is the fact that on 14 June 2007, Directive 2007/23/EC of the European Parliament and of the Council on the placing on the market of pyrotechnic articles, was published in the Official Journal. In Annex 1 of Directive 2007/23/EC the essential safety requirements for pyrotechnic articles are given.

In order to facilitate the process of demonstrating compliance with the essential safety requirements, harmonized standards for the design, manufacture and testing of pyrotechnic articles have to be developed. Mandate M 416 describes the work that the EC wants CEN to perform.

During its meeting in Delft, October 2007, CEN/TC 212 has decided to share the corresponding work to be done between five Working Groups of which WG 4 for "Pyrotechnic articles for vehicles".

At its plenary meeting in Berlin, May 2008, CEN 212 has agreed to produce, as a first step, a report presenting the results of the work presently done and describing the next steps for developing EN standards.

1 Scope

This Technical Report gives a description of the context regarding the situation of pyrotechnic articles for vehicles and their consideration within the Directive 2007/23/EC with the aim to define what harmonized standards shall be developed in order to comply with the essential safety requirements of the Annex 1 of the Directive.

2 Description of the context

The Directive 2007/23/EC for the placing on the market of pyrotechnic articles clearly includes pyrotechnic articles for vehicles (see article 2 item 5 of the Directive). CEN has received a mandate for the development of harmonised standards for pyrotechnic articles. Therefore during the first CEN/TC212 meeting in October 2007 a working group (WG4) was established dedicated to the development of standards for pyrotechnic articles in vehicles.

An agreement between CEN and ISO on technical cooperation between ISO and CEN from 1991 (Vienna agreement) makes it necessary to carefully inspect all available material on the ISO-level which may influence or may be reused for the standardisation of pyrotechnic articles. Specifically this is ISO 12097, where parts may be very useful in order to use a compatible terminology and/or testing regime.

Pyrotechnics articles for vehicles are produced worldwide for installation in vehicles manufactured in Europe or as spare parts on running vehicles within Europe.

Some pyrotechnic articles for vehicles can be regarded intermediate products, which will only enter further production steps, while some pyrotechnic articles for vehicles are directly installed into a vehicle, e.g. as a replacement part but also during vehicle assembly. This indicates that pyrotechnic articles for vehicles are subject to different levels of professional use.

Pyrotechnic substances are found in vehicle components such as airbags, seatbelt-pretensioners, circuit breakers, and various mechanical actuators. Parts, which are traded between suppliers and original equipment manufacturers (OEM), can be seen on all levels from the most basic units, i.e. the igniters or micro-gasgenerators for a pyrotechnical mechanism, to very complex units, such as an airbag module with specific mounting features and a model specific cover plate. As the parts become more sophisticated (from the igniter to a module) often also a wider range of variants exist, with every part being adjusted to the huge range of vehicle models and/or production years.

In order to limit the burden of testing and certification, both on the side of the industry and on the side of certifying bodies, it will be necessary to develop suitable principles for grouping of articles. The Directive makes explicit reference to this aspect by stating in the initial considerations that "Groups of pyrotechnic articles that are similar in design, function or behaviour should be assessed by the notified bodies as product families" (consideration no. 18).

The standards to be developed will not try to solve the problem of a difficult to overlook variety, and will not specify articles through every possible detail. The standards will have to describe basic concepts and principal types of pyrotechnic articles. Furthermore the standards will describe test methods which are meant to cover the essential safety requirements (ESR, see Annex I of the Directive) as set out in the Directive. The standards will not cover performance relevant properties outside the scope of the ESR; they will however try to include as much overlap as possible with existing performance oriented standards (see above, link to ISO).

The categorisation into P1 and P2 articles will have effects on the handling of such articles in the context of production or vehicle repair. The definition of the boundary between P1 and P2 will have to take this into account while implementing the given, even though relatively vague, definition ("P1: pyrotechnic articles which present a low hazard ;") of the Directive.

3 Interface between CEN/TC 212 Working groups

For a connection between WG4 and WG5 it was decided to have a liaison person.

WG4 experts consider igniters used as components in airbags generators and other automotive pyrotechnic devices must enter in the field of “pyrotechnic articles for vehicles” since they are specially designed for automotive applications. In that case, WG4 will create the corresponding standard and automotive igniters will not be taken in account by WG5.

Such igniters may be used without modification or adaptation in other applications than automotive. WG4 and WG5 experts agree on the following approach:

— Because WG5 and WG4 shall prepare separate standards for electric igniters, a comparison of these two standards will be made to determine what standard – the most restrictive – will be applicable when electric igniters developed for automotive industry are used outside this industry.

— In every case, igniters which will have been submitted to type-examination according to the more restrictive harmonized standard will not need to be submitted again to type-examination for all less demanding applications.

4 The harmonized EN Standards

4.1 Aim

In order to facilitate the process of demonstrating compliance with the essential safety requirements set out in the annex I of the Directive 2007/23/EC, harmonised standards for the design, manufacture and testing of pyrotechnic articles shall be drawn up and adopted by competent organisations. The European Commission (EC) has then request the Committee for European Standardization (CEN) through its Technical Committee (TC) 212 “Pyrotechnic Articles” to do so.

4.2 The standard to be performed for pyrotechnical articles for vehicles

During drafting the harmonised standards, the international orientation of the European vehicle supply industry should be reflected by taking into account the relevant international ISO standards for pyrotechnic articles for vehicles subject to the directive. That will be achieved by using existing relevant ISO test methods with no or minor adjustments.

The proposal is to draft a standard structured with different parts. So far, the following parts have been identified:

— prEN xxxxx-1: “Pyrotechnic articles for vehicles - Part 1: Terminology”;

— prEN xxxxx-2: “Pyrotechnic articles for vehicles - Part 2: Test methods”;

— prEN xxxxx-3: “Pyrotechnic articles for vehicles - Part 3: Labelling;

— prEN xxxxx-4: “Pyrotechnic articles for vehicles - Part 4: Requirements for micro gas generators”;

— prEN xxxxx-5: “Pyrotechnic articles for vehicles - Part 5: Requirements for airbag gas generators”;

— prEN xxxxx-6: “Pyrotechnic articles for vehicles - Part 6: Requirements for air bag modules”;

— prEN xxxxx-7: “Pyrotechnic articles for vehicles - Part 7: Requirements for seatbelt pretensioners”;

— prEN xxxxx-8: “Pyrotechnic articles for vehicles - Part 8: Requirements for igniters";