SLOVENSKI STANDARD
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Rail cars for petroleum products - Quick-action half coupling

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Eisenbahnkesselwagen für Petroleum-Produkte - Schnellkupplungshälfte

Wagons citernes pour produits pétroliers - Demi-raccord rapide

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English version

RAILS CARS FOR PETROLEUM PRODUCTS QUICK-ACTION HALF COUPLING

Wagons citernes pour produits pétroliers. Demi-raccord rapide.

Eisenbahnkesselwagen für Petroleum-Produkte. Schnellkupplungshälfte.

This CEN REPORT has been established by Technical Committee CEN/TC 12 and has been approved on 1983-06-15 by the Administrative Board of the European Committee for Standardization in accordance with CEN Internal Regulations.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung
Central Secretariat : Rue Bréderode 2, B-1000 Brussels

BRIEF HISTORY

By resolution 17 Working Group CEN/WG 12 meeting in Venice on 18 and 19 April 1967 decided to set up a Sub-Group CEN/WG 12/SG 1 to undertake the study of a European Quick-acting coupling for petroleum, chemical and pulverulent products. This Sub-Group was composed of 4 Member-Bodies (France, Germany, Italy and the UK) with France as the Secretariat. It was further specified in resolution 16 of WG 12 that the same coupling type would be used for rail or road transport.

At the first meeting of Sub-Group CEN/WG 12/SG 1 in Paris on 18 and 19 January 1968 the delegations were in the impossibility of conciliating their view points on one single European Quick-acting coupling and unanimously agreed to study a fixed half-coupling (tank half-coupling) which could be adapted using various coupling systems to the corresponding moveable coupling (hose half-coupling) (resolution 1).

At the 2nd meeting on 10 and 11 April 1969 in London, Sub-Group CEN/WG 12/SG 1 unanimously decided to go on with the study of the half-coupling taking as a basis the British proposal contained in doc CEN/WG 12/SG 1 N 19 and to supplement it by the study of a grooved spigot on the basis of the German and French proposals (resolution 5).

After consideration of the various drafts at the 3rd meeting in Hambourg on 1 and 2 July 1969 it was decided (resolution 7) that each Member Body would work out a new proposal and that the Secretariat would examine the possibilities of a progression of work towards a rapid solution.

Following this meeting the German delegation firmly declared for the 3 wedge coupling DN 100 and refused all other types. The United Kingdom preferred only two devices, namely the wedge and the claw-type couplings. They found that the German coupling was bulky and costly and proposed a new solution based on the German document CEN/WG 12/SG 1 N 31 A deleting the cam device. The French delegation proposed an asymetrical coupling with a lock fitted or not with a handle, for clamping on 4 contact surfaces.

As the positions seemed irreconciliable, at the 4th meeting in Paris on 18 and 19 November 1971 the Chairman proposed the following compromise supported by the Italian and French delegations :

Rail cars (petroleum and chemical industries 'products which can be assimilated to petroleum products')

I The discharging device, nominal diameter 100, of rail-cars shall be fitted with :

- either an asymetrical half-coupling adaptable to the symetrical half-coupling according to NF Standard E 29-572 - France
- or an asymetrical half-coupling - Germany

II Each half-coupling shall be able to accomodate a claw coupling - United Kingdom

III For connecting the half-couplings an adaptor shall be used (to be developed)

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It had been agreed that the French delegation would undertake the corresponding study for submission to the working group after SG 1 disbanding. This study revealed that it was impossible to mount and adapt the bristish claw coupling to the (French) symmetrical coupling and vice versa. It was unfortunately not possible to undertake the second part of the study for lack of any German proposal. At the 6th meeting of CEN/WG 12 on 13, 14 and 15 June 1973, the British delegation submitted a report of tests on several coupling types (doc CEN/WG 12/SG 1 N 49). The conclusions were the following :

Three of the attending Member Bodies (Germany, Netherlands, United Kingdom) were in favour of the TW-VK 100 half-coupling whereas two countries (France Italy) preferred the Guillemin sysmmetrical half-coupling with a lock DN 100 for the European standardization of a male half-coupling on the tank side (rail cars and road tankers) for the transport of petroleum products. For France this solution was acceptable for rail cars only.

Due to the small majority the Secretariat carried out an'additional mail enquiry (circular letter 1278 of 17 January 1974) among all CEN/WG 12 Member Bodies. Seven replies reached the Secretariat. They were distributed as follows :

- four countries (Germany, Netherlands, Switzerland, United Kingdom) declared in favour of the TW VK 100 half-coupling, and

- three countries (Belgium, France, Italy) in favour of the Guillemin half-coupling

It was not possible to obtain the view points of the other Member Bodies.

A last tentative compromise was consequently distributed on 7 February 1977 (doc CEN/TC 12 N 37) proposing the adoption of a device fixed on the rail car and able to accomodate the two quick-acting couplings.

The result was as follows :

- three countries objected to the proposal prefering the standardization of one half-coupling only : Germany, Switzerland, United Kingdom

- three countries approved the proposal : Belgium, France, Italy

Again no majority was found. In order not to lose the whole benefit of the work done and to reduce actually the number of couplings used on the European plane, the Secretariat decided submit to the Technical Bureau a situation report on the standardization of two couplings Guillemin and Elaflex (as annexed).

LIST OF NATIONAL STANDARDS RELATING TO QUICK-ACTING HALF COUPLING

NF T 81-101 : Transport et manutention de produits chimiques et hydrocarbures liquides - Demi-raccord symétrique (système Guillemin) à verrou mobile - Pression nominale 16
Transport and handling of liquid chemical products and hydrocarbons-Half symetric coupling (Guillemin system) with rotating lock-Nominal pressure 16
Beförderung und Handhabung von flüssige chemische Stoffe und Kohlenwasserstoffverbindungen Symmetrische Halbkupplung (Guillemin System) mit frei Klemmring - Nenndruck 16

DIN 28 450 : Raccord pour wagon citerne PN 10, DN 50,80 et 100 - Conception, Essai, Marquage
Couplings for tank trucks, nominal pressure 10, nominal size 50,80 and 100 - Survey, Design, Testing, Marking
Tankwagenkupplungen, Nenndruck 10, Nennweiten 50,80 und 100 - Übersicht, Konstruktive Grundlagen, Prüfung, Kennzeichnung

BS 2464 : Hose couplings for petrol, oil and lubricants.
Part 4 - Specification for 100 mm quick-acting couplings: European type

Raccords de tuyaux flexibles pour l'essence, l'huile et les lubrifiants.
Partie 4 - Spécification pour le raccord rapide de 100 mm: type européen

Schlauchkupplungen für Benzin, Öl und Schmierstoffe
Teil 4 - Spezifikation für die 100 mm Schnellkupplung: europäische Ausführung

FOREWORD

As the members of CEN/TC 12 could not agree on one single type of tank half-coupling for rail cars transporting petroleum products, and consequently on the finalization of a European standard, the Secretariat proposes nevertheless in this CEN Report CR 221 that the following two half-couplings be standardized in order not to lose the whole benefit of the accomplished work, i.e. :

- the TW-VK 100 half-coupling

- the symmetrical Guillemin coupling DN 100

1 SCOPE

This CEN Report CR 221 specifies the dimensional characteristics, excluding any other characteristics and particularly the materials and the workmanship

- of the TW-VK 100 half-coupling on the one hand

- of the symmetrical Guillemin rimmed half-coupling with moveable lock DN 100, on the other hand.

2 FIELD OF APPLICATION

Both half couplings are intended to be fitted on the refuelling and discharging devices of rail cars for petroleum products transportation.

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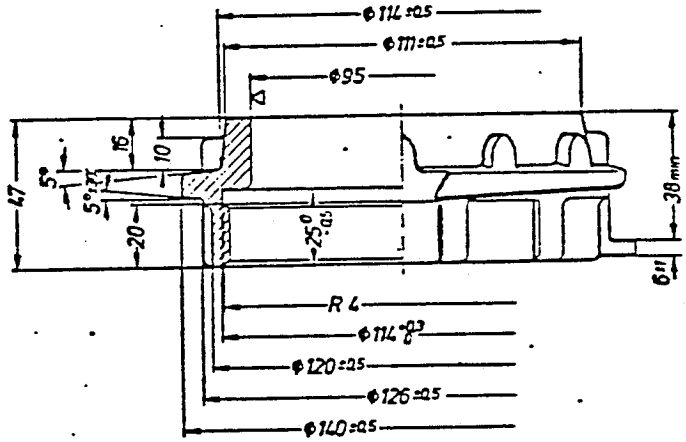
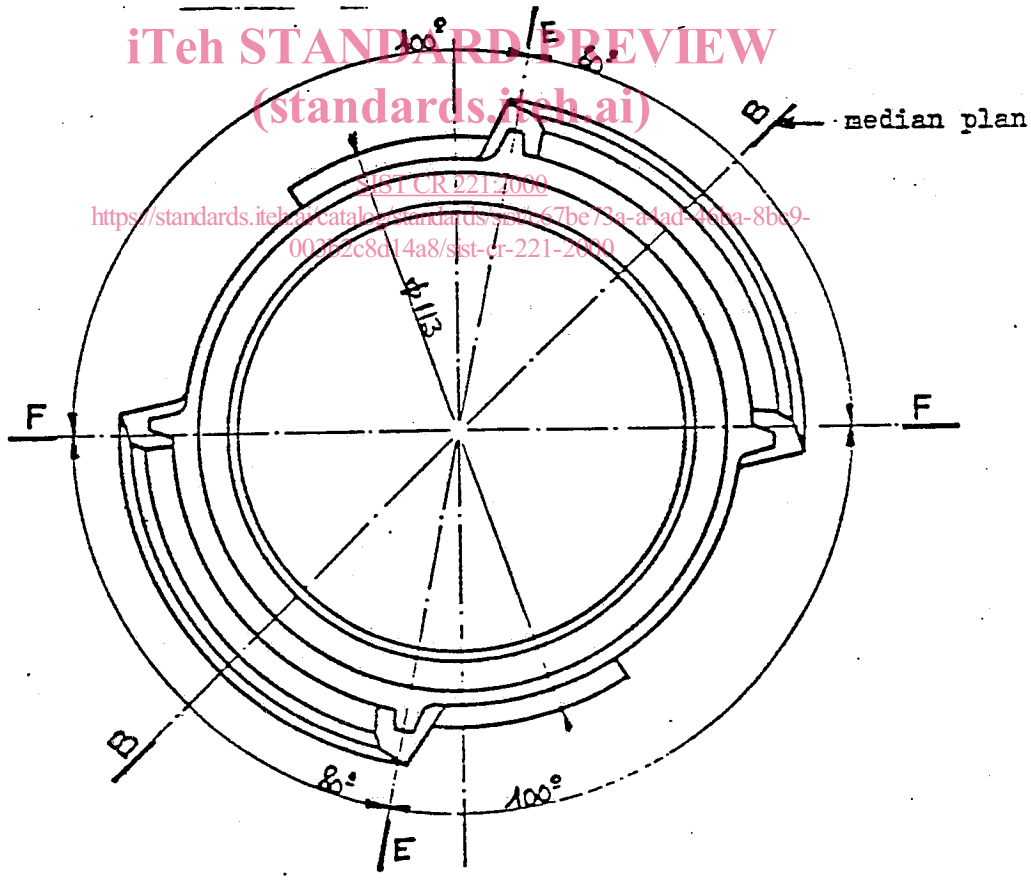
3 DIMENSIONS AND TOLERANCES

- TW-VK 100 half-coupling



- symmetrical Guillemin half-coupling DN 100



The end planes of wedges are defined as follows :

- they include a straight line EE (or FF) of the basis plane AA cutting the coupling axis (perpendicular to the basis plane)

- they are inclined to 8° with respect to the coupling axis on one or the other side

- both straight lines EE and FF make an angle of 80°