



SLOVENSKI STANDARD

SIST-TP CLC/TR 50511:2007

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Železniške naprave - Komunikacijski, signalni in procesni sistemi – ERTMS/ETCS – Progovna signalizacija za proge opremljene z ERTMS/ETCS 2. nivojem

Railway applications - Communications, signalling and processing systems -
ERTMS/ETCS - External signalling for lines equipped with ERTMS/ETCS Level 2

Eisenbahnanwendungen - Systeme für die Kommunikation, Signalisierung und
Datenverarbeitung - ERTMS/ETCS - Außensignale für mit ERTMS/ETCS Level 2
ausgestattete Strecken

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Applications ferroviaires - Systemes de signalisation, de télécommunications et de
traitement - ERTMS/ETCS - Signalisation extérieure pour les lignes équipées de
ERTMS/ETCS Niveau 2

Ta slovenski standard je istoveten z: CLC/TR 50511:2007

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**Railway applications -
Communications, signalling and processing systems -
ERTMS/ETCS -
External signalling for lines equipped with ERTMS/ETCS Level 2**

Applications ferroviaires -
Systèmes de signalisation,
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Signalisation extérieure pour les lignes
équipées de ERTMS/ETCS Niveau 2

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This Technical Report was approved by CENELEC on 2007-06-01.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

This Technical Report was prepared by SC 9XA, Communication, signalling and processing systems, of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to vote in accordance with the Internal Regulations, Part 2, Subclause 11.4.3.3 (simple majority) and was approved by CENELEC as CLC/TR 50511 on 2007-06-01.

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1 Scope

The scope of this Technical Report is to present the different line side information used in 2006 on the ERTMS/ETCS Level 2 lines and required for the application of the ERTMS/ETCS Level 2 operational rules.

NOTE The signs described in this Technical Report are only referring to ERTMS/ETCS Level 2 operations. On lines equipped with ERTMS/ETCS Level 2 there may be some additional signs needed for maintenance, degraded modes, transition to and from other signalling systems and other operational rules. These signs are not necessarily described in this Technical Report.

2 Normative references

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

EN 12899-1:2001, *Fixed, vertical road traffic signs – Part 1: Fixed signs*

CLC/TS 50459-1, *Railway applications – Communication, signalling and processing systems – European Rail Traffic Management System – Driver-Machine Interface – Part 1: Ergonomic principles for the presentation of ERTMS/ETCS/GSM-R information*

CLC/TS 50459-2, *Railway applications – Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 2: Ergonomic arrangements of ERTMS/ETCS information*

CLC/TS 50459-3, *Railway applications – Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface – Part 3: Ergonomic arrangements of ERTMS/GSM-R information*

CLC/TS 50459-4, *Railway applications – Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 4: Data entry for the ERTMS/ETCS/GSM-R systems*

CLC/TS 50459-5, *Railway applications – Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 5: Symbols*

CLC/TS 50459-6, *Railway applications – Communication, signalling and processing systems - European Rail Traffic Management System - Driver-Machine Interface - Part 6: Audible information*

UIC 651, *Layout of driver's cabs in locomotives, railcars, multiple-unit trains and driving trailers*

3 Terms and definitions

For the purposes of this Technical Report, the following terms and definitions apply.

3.1

beyond

track location according to Figure 1

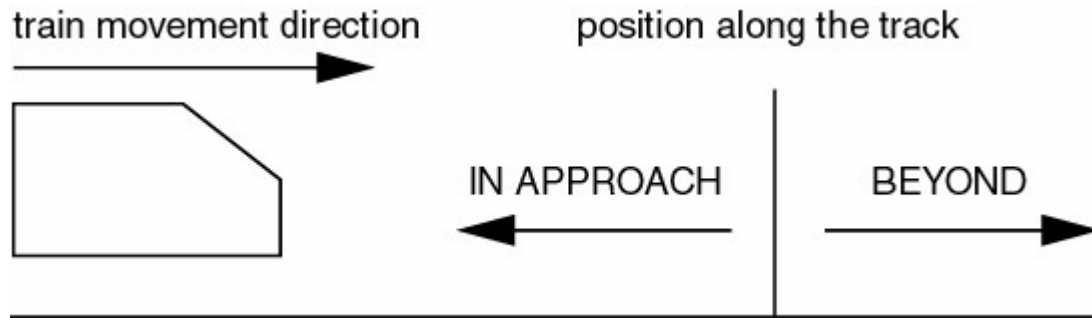


Figure 1— In approach and beyond

3.2

in approach

track location according to Figure 1

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4 Symbols and abbreviations

ADIF	Administrador de Infraestructuras Ferroviarias (current owner of the Spanish railways infrastructures)
ASFA	Anuncio de Señales y Frenado Automático (Signal Announcement and Automatic Brake, signal repetition system used in Spain, for HSL and conventional lines)
BAB	Bloqueo Automático Banalizado (Automatic Blocking for Double Track for either direction of two-way working, automatic block system used in Spain under RGC rules, for lines with double track, normally equipped with track circuits)
BAD	Bloqueo Automático en Vía Doble (Automatic Blocking for Double Track, automatic block system used in Spain under RGC rules, for lines with double track, normally equipped with track circuits)
BCA	Bloqueo de Control Automático (Automatic Block Control, cab signal used on Spanish HSL Madrid-Ciudad Real-Córdoba-Sevilla, HSL branch La Sagra-Toledo and HSL branch Córdoba-Antequera)
BLAU	Bloqueo de Liberación Automática (Automatic Blocking Liberation for Single Track, automatic block system used in Spain under RGC rules, for lines with single track, normally equipped with axle counters)
BSL	Bloqueo de Señalización Lateral (Line side Signalling Block, used on Spanish HSL Madrid-Zaragoza-Barcelona-Figueras for non fitted trains with ERTMS/ETCS equipment)
CTC	Control de Tráfico Centralizado (Centralised Traffic Control, line under supervision from the central control operator of the railway traffic, under RGC rules)

ERTMS	European Rail Traffic Management System
ETCS	European Train Control System
GIF	Gestor de Infraestructuras Ferroviarias (former owner of HSL Madrid-Zaragoza-Barcelona-Figueres, HSL Zaragoza-Huesca, HSL branch La Sagra-Toledo and HSL branch Córdoba-Antequera infrastructures, among other lines under construction)
HSL	High Speed Line
LGVEE	Ligne à Grande Vitesse Est Européenne (high speed line to east of Europe)
LZB	Linien Zug Beeinflussung (Loop line to Train Control-Command, cab signal technology of ALCA TEL-SEL, basis of the Spanish BCA block system)
MBF	Madrid-Barcelona-Francia (Acronym of the HSL Madrid-Zaragoza-Barcelona-Figueres)
NEC	Normas Específicas de Circulación (rules to be applied for the operation of trains on the HSL Madrid-Ciudad Real-Córdoba-Sevilla, HSL La Sagra-Toledo, HSL Córdoba-Antequera and the section called "ámbito de Madrid Puerta de Atocha" of the HSL Madrid-Zaragoza-Barcelona-Figueres)
PTO	Prescripciones Técnicas Operativas (rules to be applied for the operation of trains on the HSL Madrid-Zaragoza-Barcelona-Figueres, in the section Madrid-Roda de Barà, except in the section called "ámbito de Madrid Puerta de Atocha")
RENFE	Red Nacional de los Ferrocarriles Españoles (former owner of HSL Madrid-Ciudad Real-Córdoba-Sevilla infrastructure and the rest of the conventional broad gauge lines of Spain)
RFF	Réseau Ferré de France (owner of the French railways infrastructure)
RFI	Rete Ferroviaria Italiana (Italian infrastructure manager)
RGC	Reglamento General de Circulación (rules to be applied for the operation of trains on the HSL Zaragoza-Huesca, only in the section Bifurcación Huesca-Tardienta-Huesca for 1 435 mm and 1 668 mm. gauge trains, and the rest of the conventional broad gauge lines of Spain)
RSC	Ripetizione Continua dei Segnali in macchina (Italian signal repetition system)
TVM	Transmission Voie Machine (Track to Train Transmission, cab signal system used on French HSL)

5 General principles

This Technical Report defines the graphical presentation and arrangement of the information shown on the different external signs on European lines equipped with ERTMS/ETCS Level 2 defined hereafter.

The given dimensions of the graphical (text or drawing) elements are always considering their seen part.

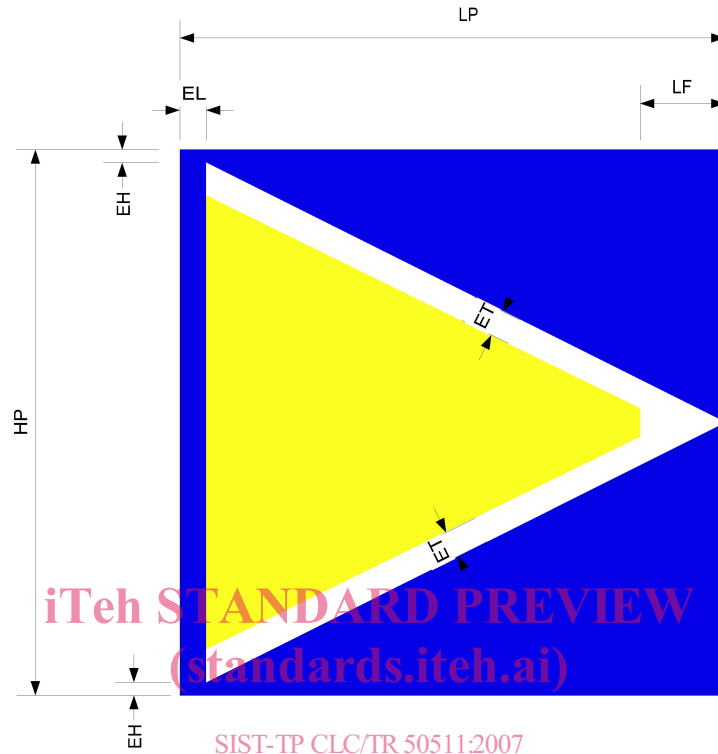
The colour of the different elements shall be uniform in the entire surface.

The parts shall show in their external face smooth surfaces, without wrinkles, cracks, holes, stains or other superficial defaults.

6 Line side equipment on the Belgian HSL

6.1 Indication of a required stopping location

Figure 2 shows the shape, the colours and the sizes of the marker.



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Figure 2 — Belgian marker

The blue, the white and the yellow are reflective and defined in Tables 6 and 9 of EN 12899-1.

Table 1 defines the values applicable in Figure 2.

Table 1 — Values for the Belgian marker

Dimensions in mm	
Name on Figure 2	Values
HP	830
LP	830
EH	20
ET	40
EL	40
LF	130

7 Line side equipment on the Dutch HSL and Betuwe Line

7.1 Indication of a required stopping location

7.1.1 Marker

The Dutch reference number of this sign is 227b.

Figure 3 shows the shape, the colours and the sizes of the marker.

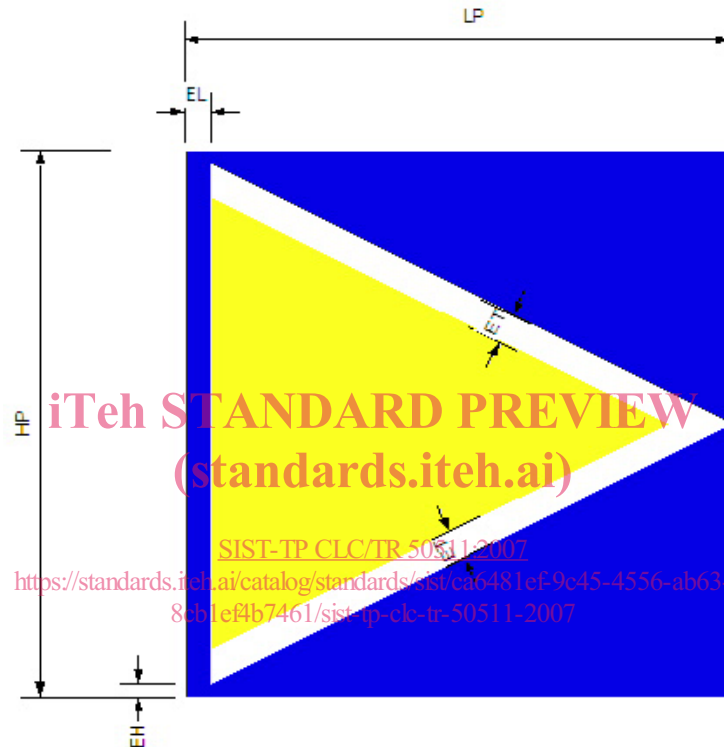


Figure 3 — Marker

For trains complying with ERTMS/ETCS operational rules the marker defines the required stopping location.

The blue, the white and the yellow are reflective and defined in Tables 6 and 9 of EN 12899-1.

The arrow on the marker always points to the track to which it applies.

Table 2 gives the values applicable for Figure 3.

Table 2 — Values applicable for figure

Dimensions in mm	
Name on Figure 3	Values
HP	500
LP	500
EH	20
ET	40
EL	40

7.1.2 Marker with white lamp illuminated

The Dutch reference number of this sign is 227a.



Figure 4 — Example with white lamp illuminated

ERTMS/ETCS Level 1 active beyond this marker. The marker may be passed. After having passed the marker, follow the ERTMS/ETCS cab signalling rules.

7.1.3 Marker with white lamp not illuminated

The Dutch reference number of this sign is 227c.



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Figure 5 — Example with white lamp not illuminated

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For trains complying with ERTMS/ETCS operational rules the marker defines the required stopping location.

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7.1.4 Colour light signal used to indicate the required stopping location

The Dutch reference number of this sign is 228.

The three colour lamps are extinguished only when the vertical dot line is illuminated.



Figure 6 — Example of the colour light signal extinguished with the vertical dot line illuminated

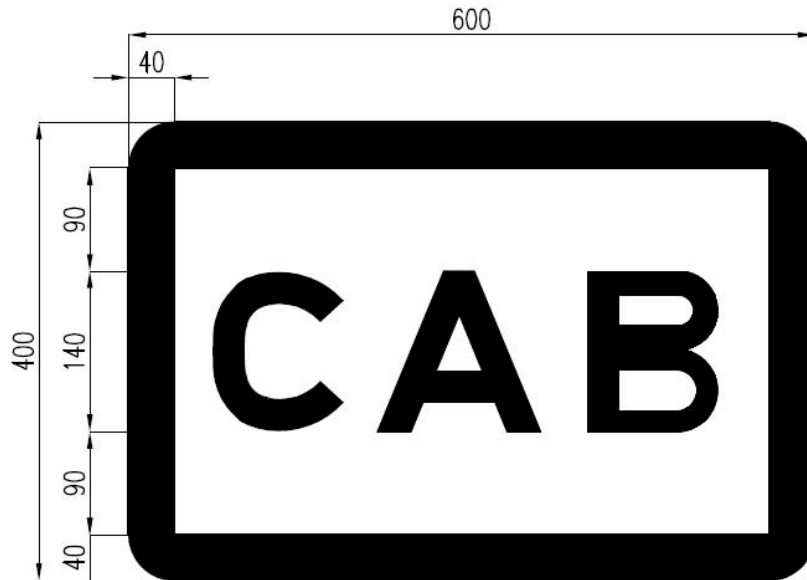
Trains not equipped with ERTMS/ETCS must not pass this signal.

For trains complying with ERTMS/ETCS operational rules the marker defines the required stopping position.

7.1.5 Commencement of the cab signal area

The Dutch reference number of this sign is 336.

Figure 7 shows the shape and the sizes of this sign.



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Figure 7 — Commencement of cab signal

7.1.6 Termination of the cab signal area

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The Dutch reference number of this sign is 337.

Figure 8 shows the shape and the sizes of this sign.

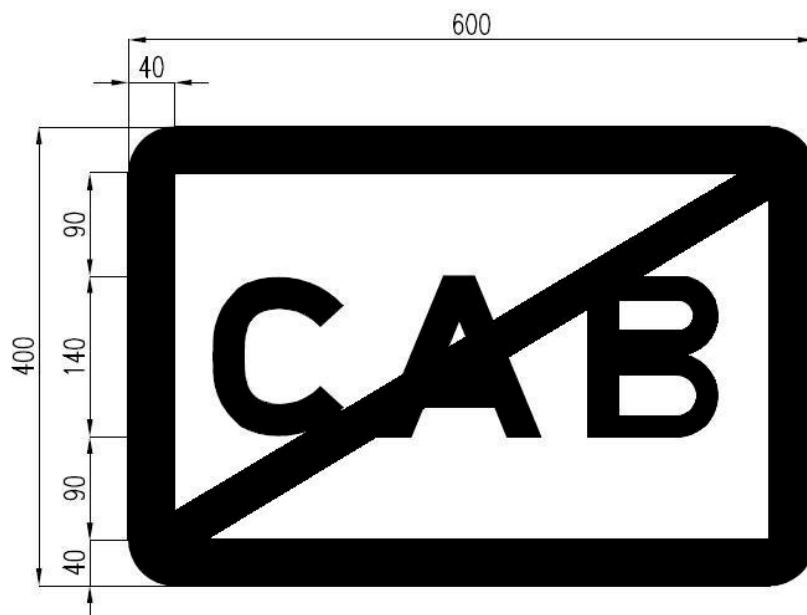


Figure 8 — Termination of cab signal