EN 15257:2006
" COMPETENCE LEVELS AND CERTIFICATION OF CATHODIC PROTECTION PERSONNEL"

René Gregoor
FLUXYS, Belgium

Klaus Riegel
FKKS, Germany (*)

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ABSTRACT

EN 15257:2006 governs the competence levels and certification process of cathodic protection personnel, mentioning general principles, duties and responsibilities for certification bodies, delegated bodies, training centres and examination centres.
The document was drawn up by Technical Committee CEN/TC 219 Cathodic Protection, the secretariat of which is held by BSI (UK).

RESUME

La norme EN 15257:2006 règle les niveaux de qualification et la certification du personnel formé à la protection cathodique contre la corrosion en exposant les principes généraux, les devoirs et les responsabilités des organes de certification et des organes délégués, ainsi que des centres de formation et des centres d'examen. Ce document a été élaboré par le Comité technique CEN/TC 219 « Protection cathodique », dont le secrétariat est tenu par BSI (Grande-Bretagne).

ZUSAMMENFASSUNG

Die EN 15257:2006 regelt die Qualifikationsgrade und Zertifizierung für mit dem kathodischen Korrosionsschutz beauftragtes Personal unter Angabe der allgemeinen Prinzipien, Pflichten und Zuständigkeiten für zugelassene Zertifizierungsstellen sowie Schulungs- und Prüfungszentren. Dieses Dokument wurde erstellt vom Technischen

Komitee CEN/TC 219 „Kathodischer Korrosionsschutz“, dessen Sekretariat dem BSI (Großbritannien) untersteht.

NORMATIVE REFERENCES

According to Section 2 of EN 15257, the following standards are defined as normative references:

- EN 12473 General principles of cathodic protection in sea water ;
- EN 12474 Cathodic protection of submarine pipelines;
- EN 12495 Cathodic protection for fixed steel offshore structures;
- EN 12499 Internal cathodic protection of metallic structures;
- EN 12696 Cathodic protection of steel in concrete;
- EN 12954 Cathodic protection of buried or immersed metallic structures. General principles and application for pipelines;
- EN 13173 Cathodic protection for steel offshore floating structures;
- EN 13174 Cathodic protection for harbour installations;
- EN 13509 Cathodic protection measurement techniques;
- EN 13636 Cathodic protection of buried metallic tanks and related piping;
- EN 14505 Cathodic protection of complex structures;
- EN 15112 External cathodic protection of well casings;
- EN 50162 Protection against corrosion by stray current from direct current systems;
- EN ISO 8044:1999 Corrosion of metals and alloys - basic terms and definitions;
- EN ISO/IEC 17024 Conformity assessment - General requirements for bodies operating certification of persons;
- CEN/TS 14038-1 Electrochemical realkalisation and chloride extraction treatments for reinforced concrete.

LEVELS OF COMPETENCE

Personnel shall be certified according to 3 levels of competence, as defined in Annex B of the standard. Specific tasks for the different application sectors are also described.

LEVEL 1

Someone who has attained Competence Level 1 must demonstrate basic knowledge of the principles of electronics, corrosion and coating, cathodic protection, measuring techniques, safety issues, and applicable standards as regards cathodic protection. The person must be capable of performing tasks related to cathodic protection as per written technical instructions and under the supervision of Level 2 or Level 3 personnel.

Furthermore, it must be ensured that the person:

- checks that the calibration of cathodic protection equipment is correct;
- can perform tests according to instructions and records and classifies results;
- reports on measurements in a comparable format;

- oversees and performs inspections and tests during the installation of the cathodic protection system;
- carries out routine maintenance tasks on the cathodic protection system.

LEVEL 2

Someone who has attained Competence Level 2 must have the same knowledge as Level 1 personnel, with the addition of

- knowledge of the general principles of corrosion and cathodic protection;
- knowledge of the principles of electronics;
- knowledge of the significance of coatings and their influence on cathodic protection;
- detailed knowledge of safety measures and the procedure for testing cathodic protection;
- an understanding of cathodic protection and the ability to take measures for cathodic protection in accordance with existing, recognised procedures.

Furthermore, someone who has attained Level 2 must be capable of

- performing and supervising all Level 1 activities;
- instructing Level 1 personnel;
- choosing appropriate measuring and testing procedures given the specific characteristics of the case;
- defining the limit of applicability for the testing procedure, according to existing procedures;
- carrying over measuring and testing standards and definitions for cathodic protection into written technical instructions for measuring cathodic protection;
- performing routine maintenance and installation tasks and testing;
- setting up measurement and testing devices and checking the settings on the equipment;
- organising and reporting on cathodic protection measurement and cathodic protection testing;
- interpreting and evaluating results according to applicable standards, rules or definitions;
- defining routine measures for correcting faults;
- planning cathodic protection systems under the supervision of Level 3 personnel;
- planning simple cathodic protection systems independently, if this is not prohibited by local rules;
- overseeing and testing the installation of the cathodic protection system;
- commissioning the cathodic protection system under the supervision of Level 3 personnel;
- maintaining the cathodic protection system.

LEVEL 3

Someone who has attained Level 3 must have demonstrated

- detailed knowledge of corrosion;

- understanding of the principles of electronics;
- ability to plan, install, commission, test and check the effectiveness of cathodic protection systems, including confidence in at least one application sector;
- ability to plan a cathodic protection system for at least one application sector without supervision;
- sufficient theoretical knowledge and practical experience in the domain of cathodic protection and the cathodic protection testing procedure;
- measurement requirements for gaining an overview and selecting criteria for assessing effectiveness;
- ability to evaluate and interpret results on cathodic protection function in accordance with existing standards, rules and definitions;
- ability to provide support when setting test and function criteria, if not available;
- familiarity with cathodic protection in other application sectors.

Furthermore, Level 3 personnel must demonstrate ability in

- planning a cathodic protection system;
- developing and checking cathodic protection testing procedures;
- interpreting standards, rules, definitions and procedures;
- defining which cathodic protection testing procedure should be used;
- interpreting reported results of cathodic protection tests and using these to check function;
- identifying any repairs required;
- performing and supervising all Level 1 and Level 2 tasks;
- taking on full technical responsibility for a training or examination centre and its personnel;
- using all experience gained to develop innovative improvements for cathodic protection planning, procedures, effectiveness checks and maintenance procedures.

If authorised by the certification body or the delegated body, Level 3 personnel may lead and oversee the training and/or examination of Level 1 or Level 2 personnel on its behalf.

APPLICATION SECTORS

Section 11 of DIN EN 15257, entitled ‘Establishment of new certification schemes, extension of schemes, transition periods’, recommends in sub-section 11.1 (General) that each country should only have one certification body for personnel.

Annex A of the standard defines the application sectors.

A.1 GENERAL

Each of the following application sectors must be used when determining competence levels and certification of cathodic protection personnel.

Every new European standard issued by CEN/TC 219 after the publication of this standard must be applied in the relevant application sector.

A.2 UNDERGROUND AND IMMERSED METALLIC STRUCTURES

This application sector covers, among others:

- underground pipelines;
- parts of onshore pipelines that cross rivers, lakes or sections of the sea;
- underground tanks;
- underside (outer side) of above-ground tanks;
- well casings.

A.3 MARINE METALLIC STRUCTURES

This application sector covers, among others:

- ships (external hull and ballast tanks);
- fixed offshore structures (drilling platforms, cladding, tension-leg platforms, etc.);
- floating structures;
- underwater structures (wellheads, headers, piping);
- coastal and offshore pipelines, risers;
- buoys;
- harbour structures, quay structures, landing places and floodgates.

A.4 REINFORCED CONCRETE STRUCTURES

This application sector covers, among others:

- reinforced (and prestressed) onshore concrete structures (bridges, walls, pillars, buildings, etc.) that are exposed to air;
- underground reinforced (and prestressed) concrete structures (pipelines, tunnels, foundations, etc.);
- reinforced (and prestressed) concrete structures in fresh water (pipelines, foundations, swimming pools, water tanks);
- reinforced (and prestressed) concrete structures in seawater (harbour structures, quay structures, landing places and drilling platforms)

This application sector also covers electrochemical procedures other than cathodic protection that prevent the corrosion of steel embedded in concrete (such as realkalisation and chloride extraction).

A.5 INNER SURFACES OF METALLIC CONTAINER STRUCTURES

This application sector covers, among others:

- fresh water containers (water tanks, filters, etc.);

- structures containing seawater (heat exchangers, filters, pipelines, etc.);
- inner surfaces in contact with fresh water or seawater;
- tanks, condensers, filters.

CURRENT SITUATION IN EUROPE

The certification process is aimed at experts responsible for operating and supervising cathodic protection systems. The certification system is sufficiently open to allow for different methodologies, as long as the minimum levels are attained.

Today, most European countries have their structures and certification scheme for training, examination and certification installed after the transition period to start-up the process.

The certification system must in the end guarantee minimum levels of skills and knowledge of cathodic protection personnel, enabling companies to successfully bid for tenders both at home and abroad, and to deliver the services with the quality the customers expect.