

EUROPEAN FEDERATION OF CORROSION WORKING PARTY 16 ON CATHODIC PROTECTION EFC WP16

QUALIFICATION AND CERTIFICATION IN THE FIELD OF CATHODIC PROTECTION: PRESENT SITUATION AND POSSIBLE EUROPEAN SCHEME

Scope:

The Working Party WP16 was created in 1998 by the European Federation of Corrosion (EFC) to deal with cathodic protection topics. The first purpose of this WP16 was to discuss on Qualification and Certification of personnel, services and companies in the field of cathodic protection. Since more than 10 years now, the NACE International operates a Certification system for the personnel in the various fields of corrosion prevention including cathodic protection. Some European countries (Germany, UK, France, Italy, the Netherlands) have launched such a system for cathodic protection.

EFC WP16 has performed a detailed status of the present situation on the Certification schemes, working or in preparation in the different countries, and discussed the possible basis of a common scheme at the European level which could be, at least, a mutual approval of the systems of the different countries or, if considered necessary and possible, a unique European Certification system. This survey was prepared from the exchanges during the meetings of the WP16 hold in 1999 and 2000; it is detailed in the present document.

This action is now continued through the preparation of a European standard specifying the general scheme; it is carried out by the CEN TC219/WG5 settled to work from 2001 on "Qualification and Certification of Operators in the field of Cathodic Protection".

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CONTENT

| | | |
|------|--|----|
| 1 | THE EUROPEAN FEDERATION OF CORROSION WORKING PARTY EFC WP16 ON CATHODIC PROTECTION | 3 |
| 1.1 | The creation of EFC WP16 | 3 |
| 1.2 | EFC WP 16 activities | 3 |
| 2 | CERTIFICATION OF CP PERSONNEL, SERVICES AND COMPANIES : OVERVIEW OF THE SITUATION IN THE EUROPEAN COUNTRIES | 4 |
| 2.1 | Germany..... | 4 |
| 2.2 | Switzerland..... | 4 |
| 2.3 | France | 4 |
| 2.4 | Italy..... | 5 |
| 2.5 | UK | 6 |
| 2.6 | Netherlands..... | 6 |
| 2.7 | Poland | 8 |
| 2.8 | Belgium | 8 |
| 2.9 | Norway | 8 |
| 2.10 | Spain | 8 |
| 2.11 | Croatia..... | 8 |
| 2.12 | Romania | 8 |
| 2.13 | Portugal..... | 9 |
| 3 | NACE INTERNATIONAL CP CERTIFICATION..... | 9 |
| 4 | COMPARISON OF THE SYSTEMS AND POSSIBLE WAYS FOR A EUROPEAN SCHEME | 11 |
| 5 | DOCUMENTATION..... | 12 |
| 6 | APPENDIX: COMPARATIVE TABLE ON CERTIFICATION OF CATHODIC PROTECTION PERSONNEL | 13 |

1 THE EUROPEAN FEDERATION OF CORROSION WORKING PARTY EFC WP16 ON CATHODIC PROTECTION

1.1 The creation of EFC WP16

The Working Party 16 on Cathodic Protection was authorised by the STAC (Science and Technology Advisory Committee) of the EFC (European Federation of Corrosion) to hold its inaugural meeting on 29th September 1998 during EUROCORR'98 in Utrecht and was officially approved by the following EFC General Assembly.

The general objective of WP16 is “to develop the science and technology of cathodic protection for buried and immersed metal structures including offshore structures, ships, pipes, the internal parts of vessels, etc...”. Care is taken to avoid duplication of effort and conflict of interest with other EFC Working Parties (WP9 marine corrosion, WP11 concrete structures, WP14 coatings) and also with CEOCOR, active in cathodic protection of buried water and gas pipelines.

1.2 EFC WP 16 activities

Certification of personnel, services and companies in the field of cathodic protection was the first topic treated by EFC WP16. There is a consensus on the need for a common system with harmonised requirements and/or mutual recognition and approval in Europe, at least for personnel in a first step. Some discussion exists on the speed to be adopted to launch this European system. First of all, a work aimed at comparing in depth the various systems existing or in preparation in the European countries, and also the NACE International system, has been carried out for collation of complete and detailed information and preparation of the present comparative report. Efforts have been made to reactivate a WG in CEN dealing with Certification of CP personnel. The former CEN/TC262/WG5 on Certification in corrosion never worked. The advantage of creating a new Work Item by reactivating such a WG in CEN/TC219 (Cathodic Protection) to start writing an European standard on Qualification and Certification of CP Personnel was to stop further standardisation in the other member countries in order to facilitate a future harmonised system in Europe. The work carried out in the frame of EFC WP16 will be the basis for writing this standard. This request was presented at the November 1999 meeting of CEN/TC219 in Paris and Resolution 4 stipulated that “The documents which France and Italy have as Standards for the subject of Qualification and Certification of operators in the field of CP will be ...circulated to the National Committees of CEN/TC219, on an informal basis, for their comments. If feedback indicates the need for a new Working Group, a proposal will be made to CEN as an addition to the business plan”. This has been done and CEN TC219 decided to request the creation of WG5 on “Qualification and Certification of Operators in the field of Cathodic Protection” during its meeting in Brussels in May 2000 and confirmed this position in its Brussels meeting of November 2000. CEN TC219/WG5 will meet in 2001 to start the work.

EFC WP16 also provides a valuable **forum for scientific and technical discussions** on all aspects of CP applications and organises **technical sessions** at EUROCORR's from 2000 in London. These discussions, which could lead to **EFC Publications**, will take place as a complement to standardisation activities carried out in the frame of CEN/TC219, ISO/TC156/WG10 and ISO/TC67/SC2/WG11.

2 CERTIFICATION OF CP PERSONNEL, SERVICES AND COMPANIES : OVERVIEW OF THE SITUATION IN THE EUROPEAN COUNTRIES

2.1 Germany

Germany has the oldest Certification system working in Europe (from 1976), but it normally concerns only CP specialised companies working for the protection of buried gas or water pipelines and tanks. This system was introduced and operated by DVGW (Deutscher Verein von Gas- und Wasserfachmännern, German association of specialists in gas and water activities) and specified in Merkblatt GW11 (Verfahren für die Erteilung der DVGW-Bescheinigung für Fachfirmen auf dem Gebiet des kathodischen Korrosionsschutzes, June 1975). It is not directly a Certification of personnel but it concerns the whole company, including its leading expert. It is attributed without examination but through an evaluation by a committee constituted of a number of experts from DVGW, FIGAWA, and the Association of CP companies. The evaluation of the personnel knowledge of German professional documents and skills is based on both school education and working experience. There are few days courses available. The duration of validity is 2 years for the first renewal, then every 5 years.

Presently, this system of Certification of CP companies is working but a more comprehensive system of training and Certification of personnel is in preparation.

2.2 Switzerland

There are about 15 companies working in CP for buried tanks. There is no Certification process but education of the personnel is organised. F. Stalder, chairman of CEOCOR Section A on CP of buried pipelines, is responsible for this training. For the pipelines, training is made in Germany.

2.3 France

The French system is operating in application of two French AFNOR standards issued in October 1996:

- NF A05-690 defines CP personnel qualification ; three levels are identified :
 - level 1: CP technician, working on the basis of written procedures, not allowed to sign measurement analysis reports or to carry out CP designs
 - level 2: CP specialist, able to write conventional measurement procedures, to analyse and validate measurement reports, and to carry out simple design work.
 - level 3: CP expert.

This standard also defines four Application Sectors for CP: Buried structures, Marine structures, Concrete structures, Internals of apparatuses.

- NF A05-691 details the process to be used for organising Certification of this CP personnel: Certification Organism(s), examination processes (theoretical "common trunk" and specific questions, practical questions), Examination Centres, ...

The Certification Organism, called CFPC (Conseil Français de la Protection Cathodique) was created by CEFRACOR (Centre Français de l'Anticorrosion) in 1996, as an independent branch of it in order to be in accordance with EN 45013 requirements. From December 1998, it has been decided that AFNOR will endorse this scheme and mandate CFPC for the

attribution of its competence mark "AFNOR Compétence" to the CP personnel certificates given by CFPC.

In the French scheme, training courses are not mandatory and left to other organisms willing to organise it; consequently, examination questions are published in order that candidates and training organisms know exactly the scientific and technical levels necessary to succeed. This choice has made the work very long as about 10 times the number of questions asked in examination were considered necessary to be published in the examination book for each theme. The 1st version of the examination book, giving common trunk and buried structures sector questions for level 1, has been issued in March 1999; the 1st corresponding examination was held in June 2000 when 14 certificates were delivered. Training courses adapted to this examination are available, organised by a consortium between ISITV, Cabinet Jacques Pezou and AFPI Provence. Questions for level 2 are to be published early in 2001 for a 1st examination in June 2001. The questions for the other Application sectors will be published when available. The second most advanced sector is marine structures (about $\frac{3}{4}$ questions written but not yet validated). A temporary Certification process based on experience of candidates but without formal examination has been launched for Level 3 in order to speed up the start-up of Certification in the four Application Sectors. It will be in application from January 2001 to June 2002 and will be very similar to that carried out in Italy but it includes in addition the presentation by the candidate of a memorandum on a specific topic.

The Certification of CP services is presently studied (based on ISO 29004-2 and ISO 9002) as a complement to CFPC/AFNOR Compétence Certification for personnel active in the company.

2.4 Italy

The Italian system is basically similar to the French one : three levels (operator, engineer, expert), four application sectors. However, there is a major difference for the level 2, which is not allowed to perform any design studies (level 3 only can and is also in charge of training and qualification). This is due to the fact that in Italy a diplomed Engineer (corresponding to what is required for level 3) has a penal responsibility for the projects he signs. This is the same in UK. In France, the management is responsible.

UNI (Italian normalisation institute) published the 1st draft standard U 68000760 in 1998 on "Qualification and Certification of Cathodic Protection personnel – General Principles", which has been officially issued in May 2000. The APCE (Association for the Protection from Electrolytic Corrosion), was founded in 1981 for exchanging information on buried metallic structures (pipeline operators and railways). Following an agreement made in 1996, CICIPND (Association for Non Destructive Testing) set up an activity dedicated to Qualification and Certification of the CP personnel and is in charge of the practical operations of certification with the technical expertise of APCE. This association is now operating the Certification system; they have published a Code for the qualification and certification of CP personnel as well as a document giving the "Basic Required Knowledge" for the four Application Sectors. Training is mandatory (a certain number of hours are defined) and examination questions are not published. They are written by a CICIPND Working Group established with technical experts from APCE.

The present situation is as follows: As a first approach, 49 certificates have been attributed for the 3rd level, in the four Application Sectors but mainly for buried structures; for the time being, Certification has been attributed on the experience of candidates and not through examination (experience >20 years, education, number of publications and patents,...). APCE

organised several training courses for levels 1 and 2. The 1st examination sessions (level 2) have been carried out by CICIPND. Certificates for about 13 applicants for level 1 and 35 for level 2 in Land applications have been delivered so far.

No specific certification for CP companies for the time being is foreseen; ISO 9000 series are requested to CP companies for some projects, but this is independent from the technical expertise of the company and only related to the quality assurance organisation.

2.5 UK

Certification of personnel in the field of corrosion is being performed by Institute of Corrosion (Icorr) for engineers and experts for many years (about 20):

- Four non-official routes allow the entry to “Professional Grade of Member” (with various requirements), but this does not concern especially Cathodic Protection but more generally corrosion; about 150 people are specialised in CP over 1200 members. This corresponds roughly to the NACE Corrosion Specialist Certification and there is a mutual agreement between both.
- A single route leads to the entry for “Professional Grade of Fellow” (with specific requirements); 250 fellows exist, but only 15 to 20 in CP.

On another side, British Gas initiated training and internal qualification of personnel for welding, CP and coatings. After privatisation, this system was taken over by the Institute of Corrosion. From a few years, a technician grade of membership (TechICorr) for the various fields of corrosion prevention including CP was established in the frame of a Professional Development Committee of ICorr. Four routes exist with various requirements, but only two for CP technician. Two levels exist for CP technicians. Training courses (40 hrs of training for both levels) are mandatory. Companies or Universities are authorised to operate courses. Examination is based on (40) theoretical and practical unpublished questions and (5) tests. There is no differentiation between the various application fields. As in Italy (not in France), a medical certificate is requested. The present situation is :

- Level 1 courses : already given 3 or 4 times
- Level 2 courses are being established.
- At this time there are about 10 to 20 technicians certified

Icorr REQ DOC “Requirements for the Certification of personnel engaged in painting and coating inspection, Cathodic Protection and Related Fields” 2nd Edition, April 1998 details the system.

Nothing exists in UK concerning Certification of CP Companies and it seems that it would not be accepted by Authorities (this could be interpreted as a restriction to free competition).

2.6 Netherlands

At this moment there is no real certification of cathodic protection firms and personnel in the Netherlands. However, there is an accreditation programme which describes requirements for personnel and firms. Further, there is a plan for certification of cathodic protection personnel.

There is an **accreditation programme** called AcKaBe (document AP 08, 1998) which is issued by the Dutch Board of Accreditation. The programme concerns the execution of cathodic protection measurements on underground tank installations which fall under CPR 9-1,

AmvB 46 and AmvB 53 (legal stipulations with regard to storage in underground tanks and environmental control of tank stations). The programme has requirements for personnel qualifications, organisation, measuring equipment, measuring methods and reports. Criteria are derived from EN 45004 (General criteria for the operation of various types of bodies performing inspection, March 1995) and NPR 6912 (Cathodic Protection). There are requirements for the following subjects:

- General aspects of the inspection body (independence, experience, EN 45004)
- Quality system (documents, document control, audits)
- Personnel and organisation (education and experience level of technical manager and inspectors, instruction plan for inspectors)
- Measuring equipment (maintenance, calibration, accuracy)
- Inspection method and procedures (instructions for different types of installation, safety, criteria for the interpretation of measuring results)
- Execution of measurements (visual check measuring equipment, place of electrode, on-, off-potential, correct polarity of CP system, frequency of measurements)
- Inspection reports (items that have to be mentioned, title, fonts, lay-out, filing)
- Subcontracting

A plan for the **certification of cathodic protection personnel** has been prepared by the certification bodies Gastec and Kema. It is intended for personnel dealing with cathodic protection of underground structures. The plan distinguishes between three levels:

- CP engineer (strategic level)
- CP specialist (operational level)
- CP surveyor (practical level)

For all levels, requirements are set for knowledge as well as skills. These requirements will be translated to end terms. To obtain a certificate an exam has to be taken which consists of a theoretical and a practical part. Examination questions are not published. The validity of the certificate is five years, after which a new exam has to be taken.

A certificate will be withdrawn if the holder of the certificate:

- Cannot demonstrate when he has performed relevant work. The maximum period that a certificate holder does not perform relevant work is half a year.
- Does not keep a record of complaints about him in the context of the certificate
- Does not immediately report in writing any complaint about him in the context of the certificate.
- Does not co-operate with interim evaluations or investigations about complaints
- Does not report changes in the circumstances, e.g. change of employer or address
- Is fined for unsafe actions
- Three complaints within half a year have been found valid.
- Does not hold a relevant function for longer than half a year
- Misuses the certificate
- Has deceased.

The certificate can also be withdrawn if the professional skill requirements have been changed for more than 25% (to be determined by a board of experts).

The plan, as described above, is not yet definitive. It will be discussed with the industry, and this may result in changes. Since several years, Gastec organises cathodic protection courses. If the certification plan continues, these courses will be adapted to enable training for the certificate.

2.7 Poland

CP personnel and companies Certification does not exist, even if the Polish Centre of Testing and Certification was created in 1994 and functions according to EN standards. 10 companies and about 200/300 technicians and engineers are concerned with CP in Poland. The objective is to create Certification of CP personnel in Poland too, possibly in 2001, but there are not yet requirements for Certification.

2.8 Belgium

Because of the little number of persons concerned and of the bi-linguism, Belgium would consider using the organisations of neighbour countries and therefore strongly supports a clear unification of knowledge request in order to ensure an equivalent level of examinations. However, self qualification within the companies should also be possible. Belgium could also organise its own certification.

2.9 Norway

No organism or association is yet dealing with Certification but this subject is expected to come up. Recommendations are considered as more adapted than standards for the time being.

2.10 Spain

There is no certification at the present time, but internal qualification established by end users for CP companies. Spain could follow other countries into the creation of some European certification, as companies are looking for certified people. Spain supported the creation of a WG devoted to CP personnel certification in CEN/TC/219.

2.11 Croatia

Nothing exists yet but courses are available for companies, especially shipyards. There is a need for certification in CP linked with coatings as both techniques are most of the time conjointly used. Training courses are organised by the companies (1 week long), but are distinct from the certification itself.

2.12 Romania

Romania has regulations (11 standards) since 1965, renewed in 1995 but nobody cares about them.. Training and certification are needed as the country is getting involved in international projects with western countries. There are many CP designers and operators in the country. Recommendations were established in the past by CP specialists of the major petrochemical companies but those are no more in activity. It is considered very important to encourage efforts on CP and corrosion prevention. There is a need for regulations, certification and training.

2.13 Portugal

Portugal has much interest in certification especially concerning its new distribution system, however there is no certification/regulation/training yet.

3 NACE INTERNATIONAL CP CERTIFICATION

The conventional Certification system for the “Corrosion Professional” used to detail 10 Certification categories, some general and others in specialty areas, including the “Cathodic Protection Specialist”. Certification in each group was attributed based on references and experience plus either open book examinations (traditional path) or participation to a certain number of selected NACE training courses (parallel path). Details are given in the “NACE International Professional Recognition Programs”. There was also a Certification for CP technicians (“CP Tester”), based on a practical and theoretical examination detailed in the NACE Guide to Qualification of Cathodic Protection Test Personnel.

A new system for Cathodic Protection Certification was set up in 2000, and is known as “**NACE Cathodic Protection Training and Certification Program**”. The main modification proposed is a 3-level system without differentiation between application levels. Each level recognises and teaches a much focused skill set, concentrating on the science and application of CP technology. NACE’s previous stand-alone courses were broader in scope as they included overviews of coatings, chemical treatment, and materials selection. While some of the material from these courses is being used, the new program offers a great deal of new instructional material while strongly emphasising hands-on work. Pipelines are such classic examples of the need for CP that it’s easy to understand why most instruction has centred on them in the past. The new program was designed for any company that has a need to apply CP technology. The course material includes examples of several industries other than pipelines.

Level 1 (CP-1) “NACE Cathodic Protection Tester”: This person should be capable of going to the field and accomplishing the periodical surveys required by a CP program. CP Level 1 individuals should have a basic understanding of corrosion fundamentals and sufficient troubleshooting skills to take care of minor problems within a CP system.

Level 2 (CP-2) “NACE Cathodic Protection Technician”: This person should have an advanced understanding of cathodic protection principles and have sufficient troubleshooting skills and experience to handle major problems within a CP system. Individuals should be capable of using the instruments required to accomplish advancing testing to include stray current interference, current requirement, and close interval surveys. CP Level 2 professionals should be able to design and install simplistic forms of galvanic and impressed current CP facilities.

Level 3 (CP-3) “NACE Cathodic Protection Specialist”: This person should have a thorough understanding of cathodic protection principles and possess sufficient skills and experience to design a complex CP system. Individuals should be capable of developing a maintenance program and organising standards and operating procedures for cathodic protection systems. They should be able to design alternate sources of CP current when conditions dictate. CP Level 3 professionals should be able to conduct formal training courses as well as provide one-on-one training for understudies by demonstrating the proper use of the various instruments and testing techniques required for a CP system.

Certification Program Overview for each level:

The two first levels require both written and hands-on exams, while levels 2 and 3 have demanding work and experience prerequisites.

Cathodic Protection Tester:

- To take the classroom training (recommended): 6 months cathodic protection work experience, plus High School diploma or GED.
- To sit for the exam (2,5h written plus Practical –hands-on-) without taking the course (recommended): 6 months cathodic protection work experience with CP Level 1 Course or equivalent, or 3 years cathodic protection work experience.

Cathodic Protection Technician:

- To take the classroom training (required):

Path #1: 3 years cathodic protection work experience, plus High School diploma or GED, plus CP Level 1 Certification or equivalent training.

Path #2: 1 year of cathodic protection work experience, plus 4-year Physical Science or Engineering degree, plus CP Level 1 Certification or equivalent training.

Path #3: 2-year post high-school training from an approved Math or Science Technical/Trade School, plus 2 years cathodic protection work experience, plus High School diploma or GED plus CP Level 1 Certification or equivalent training.

- To sit for the exam (2,5h written plus Practical –hands-on-) without taking the course (required):

Path #1: 3 years cathodic protection work experience, plus High School diploma or GED, plus CP Level 2 Certification or equivalent training.

Path #2: 1 year of cathodic protection work experience, plus 4-year Physical Science or Engineering degree, plus CP Level 2 Certification or equivalent training.

Path #3: 2-year post high-school training from an approved Math or Science Technical/Trade School, plus 2 years cathodic protection work experience, plus High School diploma or GED plus CP Level 2 Certification or equivalent training.

Cathodic Protection Specialist:

- To take the classroom training (required):

Path #1: 12 years cathodic protection work experience, including 4 years in responsible charge, plus 2-year post high-school training from an approved

Math or Science Technical/Trade School, plus CP Level 2 Certification or equivalent training.

Path #2: 6 years cathodic protection work experience, including 4 years in responsible charge, plus 4-year Physical Science or Engineering degree, plus CP Level 2 Certification or equivalent training.

Path #3: 4 years cathodic protection work experience in responsible charge, plus one of the following: a) Bachelor's degree in Engineering or Physical Sciences AND an advanced degree in Engineering or Physical Science that required a qualification exam; b) PE, Peng, or equivalent; c) EIT registration or equivalent, plus CP Level 2 Certification or equivalent training.

- To sit for the exam (5h written) without taking the course (required):

Path #1: 12 years cathodic protection work experience, including 4 years in responsible charge, plus 2-year post high-school training from an approved Math or Science Technical/Trade School, plus CP Level 3 Certification or equivalent training.

Path #2: 6 years cathodic protection work experience, including 4 years in responsible charge, plus 4-year Physical Science or Engineering degree, plus CP Level 3 Certification or equivalent training.

Path #3: 4 years cathodic protection work experience in responsible charge, plus one of the following: a) Bachelor's degree in Engineering or Physical Sciences AND an advanced degree in Engineering or Physical Science that required a qualification exam; b) PE, Peng, or equivalent; c) EIT registration or equivalent, plus CP Level 3 Certification or equivalent training.

Courses and exam-only offerings are normally scheduled with one year time for USA and also Australia and Europe.

4 COMPARISON OF THE SYSTEMS AND POSSIBLE WAYS FOR A EUROPEAN SCHEME

A schematic and simplified comparison of the systems existing or in preparation is given in table 1 for the Certification of personnel.

The first proposals which could be taken as a basis of discussion for an European scheme for personnel Certification are :

- A 3-level system : level 1 (CP technician), level 2 (CP specialist), level 3 (CP expert)
- Level 2 able to work on simple CP design (to be defined), the final study being validated by level 3 when requested by the local regulations
- Four Application Sectors (buried, marine, concrete, internals), at least for level 3
- Free training (mandatory or not ?)
- Examination based on theoretical and practical (except for level 3) questions
- Questions published if training not mandatory
- Certification based only on evaluation of experience for level 3 during the 5 first years

These proposals will be discussed in details within CEN TC219 WG5.

Eventual action in the field of Certification of CP Companies or Services will be discussed in a second step.

5 DOCUMENTATION

- DVGW Merkblatt GW11 : Verfahren für die Erteilung der DVGW-Bescheinigung für Fachfirmen auf dem Gebiet des kathodischen Korrosionsschutzes, June 1975
- AFNOR Standard NF A05-690 : Protection Cathodique. Définition des niveaux de compétence des agents en vue de leur qualification, September 1996
- AFNOR Standard NF A05-691 : Protection Cathodique. Certification des agents. Principes généraux, October 1996
- Certification CFPC des agents en protection cathodique, Recueil d'examen, CEFRACOR, December 1998
- AFNOR Compétence, Personnel en protection cathodique, Règlement de Certification, R 289, Rev.2, November12, 2000
- UNI 10875 : Qualificazione e certificazione del personale addetto alla protezione catodica, Aprile 2000
- Icorr REQ DOC : Requirements for the Certification of personnel engaged in painting and coating inspection, Cathodic Protection and Related Fields", Institute of Corrosion, 2nd Edition, April 1998
- NACE International Professional Recognition Programs, NACE International, 1997
- NACE Cathodic Protection Training and Certification Program, Supplement to Materials Performance, 2000

6 APPENDIX: COMPARATIVE TABLE ON CERTIFICATION OF CATHODIC PROTECTION PERSONNEL

| Countries | France | Italy | UK | Netherlands | USA |
|-----------------------------------|--|---|--|---------------------------|--|
| Standards | NFA05-690 (Qualification) NFA05-691 (Certification) | UNI 10875 (Qualification and Certification) | | | |
| Certification organisms | CFPC (CEFRACOR) mandated by AFNOR | CICPND | Institute of Corrosion (Icorr) | GASTEC and KEMA | NACE International |
| Publications | Recueil d'examen CFPC | CICPND Code for Certification and Basic Required Knowledge | Icorr REQ DOC Requirements for the Certification of Personnel | | Professional Recognition Program, Guide to Qualification of CP Tester |
| Highest level of Certification | 3 (CP Expert) | 3 (CP Expert) | Professional Grade of Fellow | CP Engineer | CP Specialist (level 3 in new CP system) |
| Medium level of Certification | 2 (CP Specialist) | 2 (CP Engineer) | Professional Grade of Member | CP Specialist | CP Technician (level 2 in new CP system) |
| Lowest level of Certification | 1 (CP Technician) | 1 (CP Operator) | CP Technician Grade of Member levels 1 and 2 | CP Surveyor | CP Tester (level 1 in new CP system) |
| Application Sectors | 4 (buried, marine, concrete, internals) | 4 (buried, marine, concrete, internals) | no sector | Buried structures only | no sector |
| Training | not mandatory | Mandatory (32hr for level 1, 40hr for level 2) | mandatory (40 hr) for Technician Grade | | not mandatory (except for "parallel path") |
| Training centres | open (USITV/CJP /AFPI) | APCE | Agreed universities or companies | GASTEC | NACE International |
| Examination | yes, except for level 3 on temporary basis | yes, except for level 3 on temporary basis | yes for CP technicians | yes | open book exam (except for "parallel path") |
| Questions | published | not published | not published | not published | not published |
| Organisation of examination | CFPC | CICPND | ICorr | GASTEC | NACE International |
| Examination Centres | agreed by CFPC (Gaz de France for Buried Structures) | agreed by CICPND (Italgas, ENI, Napoletana Gas, Camuzzi Gas, Consiag) | agreed by Icorr (3, 1 being operational) | GASTEC | agreed by NACE International |
| Validity period | 5 yr | 5 yr | 5 yr | 5 yr | 5 yr |
| Present status | 1 st exam in June 2000 (Buried /level 1) | Level 3 certified 1 st exam in 1999 (Buried/level 2) | working | in preparation | working, |