



**Inspectors of Pressurised Equipment Piping only
(Metallics)**

Guidelines for application for initial certification

1. Scope

SANS 10227 : 2007 – Code of practice for the evaluation of the technical competence of inspection authorities for the certification of pressure equipment, requires that personnel responsible for inspection, testing and verification of non-destructive testing shall have sound technical knowledge and certification, which meets the minimum requirements of the South African Qualification and Certification Committee for Inspectors of Pressurised Equipment.

This document provides guidelines and requirements for application for certification as an Inspector of Pressurised Equipment **Piping only**.

All references in this document to Inspector of Pressurised Equipment mean Inspector of Pressurised Equipment Piping only.

2. Objectives

The objective of this document is to ensure that a standard process is followed for application for certification of Inspectors of Pressurised Equipment.

3. Responsibilities

It is the responsibility of:

- 3.1 the applicant to complete SAQCC-IPE certification application forms.
- 3.2 the administrator controller (Certification) to provide the applicant with certification application forms and to forward the completed forms and supporting documents to the SAQCC-IPE committee for assessment and to inform applicants of assessment results.
- 3.3 the SAQCC-IPE committee to assess applications for IPE certification, in accordance with this document.

4. Requirements for certification

Every applicant for IPE certification is required to complete the prescribed certification application form and furnish proof of qualifications, acceptable to SAQCC-IPE, which substantiate that the applicant:

- 4.1 has proven knowledge of welding and fabrication inspection. **(SAIW L1 & L2 or approved equivalent)**
- 4.2 has proven knowledge of evaluation of radiographs. **(SAIW RT Interpreters or approved equivalent)**
- 4.3 has proven knowledge of the content of design and manufacturing codes commonly used in industry. **(SAIW ASME Code course or approved equivalent)**
- 4.4 has proven knowledge of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) Pressure Equipment Regulations and the Mine Health and Safety Act 1996 (ACT 29 of 1996). **(Covered in SAIW L2 course)**
- 4.5 has met the minimum practical and classroom training requirements as detailed in this document. Satisfactory completion of each of the fourteen tasks on five different types of piping required for practical training shall be verified by the certified IPE responsible for the training of the applicant. The certified IPE is required to sign and affix his IPE certification number to each completed inspection task on the practical training record. In addition, each applicant is required to provide documentary proof of the completion of each of the individual inspection tasks. This proof can be in the form of inspection reports, visit reports, quality control plans or other relevant documentation acceptable to SAQCC-IPE. These documents must be verified by the certified IPE involved in the training and must clearly indicate the involvement of the trainee. The minimum duration of training accepted by SAQCC-IPE is two years. All documents submitted must be originals or certified copies of originals.

N.B.1

With effect from January 2010, all applicants for initial IPE certification who are starting their practical training in 2010 and later must hold current certification in radiographic interpretation resulting from independent examination. This requirement does not apply to applicants who had started their practical training prior to 2010.

N.B.2

With effect from January 2010, all applicants for initial IPE certification who are starting their practical training in 2010 and later may only start accumulating the required inspection tasks after successful completion of the SAIW Level 1 Welding Inspector course and examination. Inspection tasks recorded as being dated before the date of passing the final SAIW Level 1 examination will not be accepted.

- 4.5 is capable and physically able to perform all activities involved in the duties of an IPE and shall:
 - submit a record of visual acuity tested within the six months prior to the date of application or re-application. This must be submitted on the standard SAQCC-IPE vision record form and must be an original document signed and stamped

by the optometrist. This vision test record shall certify that the applicant is able to read J1 (or N5) letters on the standard Jaeger or equivalent test chart at 300 mm and J7 (or N10) at 1000 mm, with at least one corrected eye or uncorrected eye and of at least 6/6 on a Snellen chart or orthorator, and

- have clinically assessed normal fields of vision

5. **General**

Application forms are available from:

The Administration Controller (Certification)
SAIW Certification
52 Western Boulevard, Off Main Reef Rd
City West
2092

Telephone no: (011) 298-2100
Facsimile no: (011) 836-4132
e-mail: rencia.grundlingh@saiw.co.za

Application forms may also be downloaded from the SAIW website at: www.saiw.co.za

- 5.1 The applicant shall return the application together with all supporting documentation to the Administrator. All supporting documentation must be original or verified copies. Verification should be done by a Commissioner of Oaths or equivalent authority.
- 5.2 Applicants may be requested to present themselves for a professional interview with the SAQCC-IPE committee and will be advised in writing should such an interview be required.
- 5.3 Applicants will be advised in writing as to whether their application has been successful or unsuccessful.
- 5.4 Unsuccessful applicants may appeal in writing on the certification decision of the SAQCC-IPE committee and request further information as to the reason(s) for rejection of their application.
- 5.5 Information relating to unsuccessful applications will not be divulged by the committee to any third party.

6. **Certification**

- 6.1 Successful applicants will receive a copy of the Code of Ethics which must be signed and the signed copy returned to the Administrator. A uniquely numbered certificate will be issued to each successful applicant on the receipt of the signed copy of the Code of Ethics.
- 6.2 Certification is subject to periodic renewal periods of three years with re-certification after nine years.

- 6.3 All IPE certificate numbers issued will be recorded on the SAQCC-IPE National Register and will be published on the SAIW website, which is accessible by the public.

7. Attachments to this document

- 7.1 Note on practical training requirements
- 7.2 Related inspection tasks for practical training
- 7.3 Rights of appeal and complaint

**NB: Please note that applications will not be processed
unless proof of payment is received
Proof of payment needs to be attached to the application**



SAQCC-IPE

**South African Qualification and Certification Committee
for Inspectors of Pressurised Equipment Piping Only**



Application for initial certification

**Certification fee payable on submission of the application.
R2 012.00 including VAT for each category**

Please type or print all information in black ink and block letters.

1. Personal

- a. Surname:
 First name/s:
 Identity No. or Passport No: Date of Birth:

- b. Postal address for SAQCC-IPE correspondence:

 Postal code:
 Residential address:

 Postal code:

- c. Company name and postal address:

 Postal code
 Company VAT No:

3. Practical training details

Name and address of company	Position held	Dates employed				Name and title of management representative	Signature of representative*
		from		to			
		Month	Year	Month	Year		

If space is insufficient, please attach extra information on additional separate sheets.

* If not possible, state reasons why.

I hereby certify that the information I have included on this application is accurate. I give the SAQCC-IPE permission to verify this information. I understand that any false statement or omission may nullify this application.

Signature:

Date:

Report on practical training for SAQCC-IPE Piping only

Name:

	Relevant training received					
	Vessel No.	Manufacturer	Code	Date	Client	Verification by certified IPE (Number and signature)
Inspectors task	Establish that the manufacturer is working to drawings verified by the AIA.					
1	1.					
	2.					
	3.					
	4.					
	5.					
2	Verify that QCP is approved by manufacturer, client and AIA. Incorporate AIA requirements for witness, hold and surveillance points. Sign and complete the inspection stage requirements.					
	1.					
	2.					
	3.					
	4.					
	5.					
3	Correlate material certificates with materials and check conformity to specification.					
	1.					
	2.					
	3.					
	4.					
	5.					
4.	Identify material and witness transfer identification.					
	1.					
	2.					
	3.					
	4.					
	5.					

	Vessel No.	Manufacturer	Code	Date	Client	Verification by certified IPE (Number and signature)
5	Visually examine material.					
	1.					
	2.					
	3.					
	4.					
	5.					
6	Verify that applicable approved welding procedures are being used and followed. Where procedures have not been previously approved by an AIA, the inspector witnesses the production welding procedure qualification tests, the mechanical testing of test pieces prepared from the coupons, evaluates the results and validates the applicable reports. Where witnessing of mechanical testing of welding procedure test pieces is not possible, practical training is required to be undertaken in a mechanical testing laboratory.					
	1.					
	2.					
	3.					
	4.					
	5.					
7	Verify that welders qualified to the appropriate code are being used. Where welders are required to undergo testing, witness the production of the test coupon, evaluate the results of the examination of the coupon and validate applicable reports.					
	1.					
	2.					
	3.					
	4.					
	5.					
8	Examine fit-up of different components weld seams. Verify results of dimensional checks. Examine weld preparations.					
	1.					
	2.					
	3.					
	4.					
	5.					

	Vessel No.	Manufacturer	Code	Date	Client	Verification by certified IPE (Number and signature)
9	Evaluate radiographs and accept or reject components on such evaluation. Verify NDT personnel qualifications. Verify defects reported by NDT personnel as to their acceptability against the applicable code. Examine NDT procedures, techniques, sheets and/or reports for compliance as having been signed/authorised by recognised competent personnel. All other NDT tasks must be performed by the manufacturer's/repairer's or AIA specialised personnel.					
	1.					
	2.					
	3.					
	4.					
	5.					
10	Witness that pre and post weld heat treatments are performed in accordance with approved procedures, if this requirement is included in the QCP. Examine heat treatment records and verify compliance with procedures.					
	1.					
	2.					
	3.					
	4.					
	5.					
11	Witness the pressure test and verify code requirements. Where necessary, record the amount of permanent set.					
	1.					
	2.					
	3.					
	4.					
	5.					
12	Visually examine the completed vessel or sectional replacement/modification area, as relevant, internally and externally.					
	1.					
	2.					
	3.					
	4.					
	5.					

	Vessel No.	Manufacturer	Code	Date	Client	Verification by certified IPE (Number and signature)
13	Verify collation of documentation for data book or sectional replacement report.					
	1.					
	2.					
	3.					
	4.					
	5.					
14	Verify certification details and co-sign certification with the manufacturer or repairer.					
	1.					
	2.					
	3.					
	4.					
	5.					

I hereby certify that the statements in this record of practical training are correct and factual and are in accordance with the requirements of SAQCC-IPE. I give the SAQCC-IPE permission to verify this information. I understand that any false statement or omission may nullify this application.

d. Employer verification of practical training required.

Signature of management representative: Name of management representative:

Title of management representative:

Checklist for submission of application for certification as an Inspector of Pressurised Equipment, Piping only, with SAQCC-IPE.

1. Is the application for certification, correctly completed either in black ink or type and verified by your employer(s)/certified IPE in respect of your practical training and experience and are all necessary signatures in place, as well as correct dates?
2. Are certified copies of all relevant qualifications/certificates being submitted as evidence of having the qualification requirements for registration with SAQCC-IPE?
3. Is the necessary supporting evidence enclosed?
4. Has an original vision test record confirming visual acuity tested in the six months prior to the date of application enclosed? Has it been completed on the SAQCC-IPE format? Has it been stamped by the optometrist?

N.B. Do not enclose original certificates. A Commissioner of Oaths, e.g. SAPS, can certify copies.

South African Qualification and Certification Committee

for

Inspectors of Pressurised Equipment

Vision testing for Inspectors of Pressurised Equipment Piping only

(This form to be handed to the medical examiner for completion)

Vision test record

For:
(Name of candidate)

Visual acuity

The requirements for visual acuity are:

- a. the ability to read J1 size letters of the standard Jaeger test chart at 300mm and J7 at 1 000mm, and
- b. at least 6/6 on a Snellen chart or orthorator with at least one eye, corrected or uncorrected.

N.B. Circle where applicable

Test	J1 @ 300 mm, J7 @ 1000 mm	Snellen 6/6
Left	Yes / No	Yes / No
Right	Yes / No	Yes / No

Field of vision

The requirements for field of vision are:

Test	Field	Remarks
Left	Normal / Not normal	
Right	Normal / Not normal	

Date of test:

Tested by:
(Medical Officer / Optometrist)
Signature and stamp

Attachment 7.1 Practical training

Introduction

Examination of the codes and standards used in South Africa for the manufacture of pressure equipment indicates that the functions of an inspection authority as defined in these documents are quite similar. These functions are described in the table overleaf.

Major users often require inspectors to become more involved in manufacture and testing of equipment than at the minimum level required by a particular code.

The inspection tasks described overleaf can be regarded as a collation of minimum code requirements and normally applicable requirements of users. Minimum practical training requirements for certification are established in relation to each of the inspector tasks.

Inspection Authorities that undertake training of Inspectors should record progress of trainees on the attached SAQCC-IPE document.

Training should be completed under the supervision of an SAQCC-IPE certified IPE. Supervised work should be aimed at providing the trainee with exposure to different facets of each of the tasks.

The minimum acceptable duration of practical training is two years.

Attachment 7.2 Related inspection tasks for piping practical training or experience requirements (SANS 347 Cat II and higher)

Inspection Authority function	Inspector's tasks	Remarks	Minimum practical training
1. Verification that the design of all parts of the pipeline and repairs and modifications are in accordance with the requirements of the applicable approved code	Establish that the manufacturer / repairer is working to drawings approved by a piping designer. The piping designer shall be an appropriately professional person (i.e. registered Pr. Eng. Pr. Technologist or Pr. Cert. Eng.) as required by SANS 347.		Perform inspector tasks on 10 different designs. The pipelines shall have: (1) at least 5 different piping components e.g pipe, elbows, t-pieces, etc. (2) at least 10 welds per design, (3) system 4" piping and above.
2. Verification that an agreed quality plan is to be implemented. Incorporated of inspection authority requirements for witness, hold and surveillance points.	Where applicable, verify that the quality plan is approved by manufacturer, client and inspection authority. Incorporate inspection authority requirements for witness, hold and surveillance points. Sign and complete the inspection stage requirements of the inspection authority.	This is not a code requirement but a quality plan is a generally accepted requirement of all parties	Perform inspector tasks on 10 different designs (different design means not exactly the same line).
3. Correlation of material certificates with materials of construction and checking conformity of material specification.	Correlate material certificates with materials and check conformity to specification.		Correlation of certificates for 5 different materials.
4. Identification of material and witnessing of transfer identification	Identify material and witness transfer identification.		Witness 5 material identification transfers.
5. Examination of material cut edges and/or heat affected zones.	Visually examine material.		Examination of material for 10 pipelines. See note 1.

Related inspection tasks for practical training

Inspection Authority function	Inspector's tasks	Remarks	Minimum practical training
6. Approval of welding procedures.	Verify that applicable approved welding procedures are being used and followed. Where procedures have not been previously approved by an inspection authority, the inspector witnesses the production procedure test plates, the mechanical testing of test pieces prepared from the components, evaluates the results and validates applicable reports.	The inspection authority should have specifically designated persons to approve welding procedures for use in consultation.	Verification of 5 procedures. Witnessing of 5 different procedure tests and validating applicable reports.
7. Approval of welders and operators	Verify that welders are qualified to the appropriate code are being used. Where welders are required to undergo testing, the inspector witnessed production of the test plate, evaluates the results of the examination of the plate and validates applicable reports.		Acceptance of documentation for 5 welders. Witnessing and acceptance of 5 different test plates and validating applicable reports.
8. Examination of fit-up of seams for welding including dimensional check, examination of weld preparations, tack welds, etc.	Examine fit-up of seams for welding. Verify results of dimensional checks. Examine weld preparations and tack welds.		Examination of 10 different pipelines incorporating examination of joints of 5 different piping components. See Note 1. Surveillance.

Related inspection tasks for practical training

Inspection Authority function	Inspector's tasks	Remarks	Minimum practical training
<p>9. Examine and accept non-destructive test reports. Verify compliance with agreed procedure and acceptability of any defects.</p> <p>Where necessary, the inspection authority may need to verify results by practical examination.</p>	<p>Evaluate radiographs and accept or reject components on such evaluation. Verify NDT personnel qualifications. Verify defects reported by NDT personnel as to their acceptability against a code. Examine NDT procedures, techniques, sheets and/or reports for compliance as having being signed / authorised by the recognised competent personnel. All other NDT tasks must be performed by the manufacturer's / repairer's or inspection authority's specialised personnel.</p>	<p>The inspection authority should have access to specifically designated persons to approve all relevant NDT procedures.</p>	<p>Acceptance of complete sets of radiographs for 10 different pipelines.</p>
<p>10. Examine heat treatment records and verify compliance with procedure.</p>	<p>The inspector may witness that pre and post heat treatments are performed in accordance with approved procedures if this requirement is included in the quality plan. Examine heat treatment records and verify compliance with procedures.</p>	<p>Witnessing heat treatment is not a code requirement.</p>	<p>Examination and verification of 5 separate heat treatments incorporating pre and post weld heat treatment using furnace and local heat treatment methods.</p>
<p>11. Witness the pressure test and where necessary, record the amount of permanent set.</p>	<p>Witness the pressure test and verify code requirements. Where necessary, record the amount of permanent set.</p>		<p>Witnessing of test on 10 different pipelines.</p>

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Related inspection tasks for practical training

Inspection Authority function	Inspector's tasks	Remarks	Minimum practical training
12. Final visual examination	The inspector should visually examine the completed manufactured pipeline, as relevant, internally and externally.	Where possible, this should be carried out before and after pressure testing.	Examination of 10 different pipelines.
13. Collation of documentation	Verify collation of documentation for data pack or repair report.	This is not a code requirement.	10 Pipelines.
14. Sign certificate of manufacture.	Verify certification details and co-sign certification with the manufacturer.	The inspector must be registered to carry out his work.	Witness the signing of certificate of manufacture for 10 pipelines.

Note 1

Where training is gained on repairs and modifications, the scope of work must be such that the replacements of different types of piping components are included. This provision is included to ensure that such inspectors gain adequate training of the complexities involved in new pipeline construction.

Note 2

The requirement for practical training that it is to take place over a two year period is to ensure that adequate experience is obtained in performing the 14 tasks. The requirement for training on the manufacture, modification or major repair on ten different pipelines is a minimum requirement.

Attachment 7.3 Rights of appeal and complaint

The following is a summary of the SAIW Certification complaint, appeal and review procedure.

The full procedure can be found in document: Operating Procedure OP7: Complaint, review and appeals

1. Complaints against applicants, candidates and certified persons or organisations

- 1.1 Any person may submit a complaint in writing to SAIW Certification Administration regarding the competence integrity or quality of work of any applicant, candidate, or certified person or organisation.
- 1.2 The person against whom the complaint is laid ('the respondent') has the right to be provided with a copy of the complaint (and any supporting documentation supplied to SAIW Certification Administration by the complainant in support of the complaint).
- 1.3 The Respondent will be requested to respond to the complaint in writing within 20 (twenty) days of notification by SAIW Certification Administration that a complaint has been laid against him.
- 1.4 The secretariat will appoint a Complaints Panel to consider the complaint. If the Complaints Panel finds that the complaint has no merit, it will dismiss same. If the Complaint Panel finds that the complaint has merit, it will appoint an Inquiry Panel to conduct an inquiry into the complaint. The Complaints Panel will notify both the complainant and the respondent of its decision within 14 (fourteen) days of such decision being taken.
- 1.5 In the event that a Complainant or Respondent is aggrieved by the decision of the Complaints Panel, he / she shall have the right to send a written request to SAIW Certification Administration that an inquiry be held to consider the complaint within 20 (twenty) days of receipt of notice of the decision of the Complaints Panel, in which case the relevant Scheme Committee or the ANBCC Certification Board will appoint the Inquiry Panel to conduct a Complaint Inquiry.
- 1.6 Neither the complainant nor the respondent need be present at the Complaint Inquiry unless he or she needs to give evidence.
- 1.7 The Secretariat will appoint a person to represent the complainant at the Complaint Inquiry. The respondent shall not be entitled to legal representation at the Complaint Inquiry, but shall be entitled to the assistance of a colleague or interpreter to aid in interpretation, at the respondent's own cost.
- 1.8 The complainant (or the complainant's representative) and the respondent will have the right to present evidence to the Inquiry Panel and call witnesses, and shall be entitled to ask questions and cross examine representatives and witnesses from the other side. The Inquiry Panel will notify the complainant and the respondent of its decision within 14 (fourteen) days of such decision being taken.
- 1.9 Any complainant or respondent aggrieved by a decision of an Inquiry Panel can lodge an application with SAIW Certification Administration for appeal within 20 (twenty) days of notification of the outcome of receipt of notification of the outcome of the Complaint Inquiry.

2. Appeal

- 2.1 The Appeal Panel will inform the complainant and respondent of the date, time and venue of the Appeal Hearing.
- 2.2 Neither the respondent nor the complainant shall be obliged to appear at the hearing in person, unless they are required to appear in person to give evidence.

- 2.3 In the event that the respondent appears in person he or she has the right to be adequately informed of the nature of the complaint against him or her and his rights in respect of same.
- 2.4 The respondent may not be legally represented at the Appeal hearing. The Appeals panel, will however have the discretion to allow the respondent legal representation in cases of a serious and complex nature. The complainant will be represented by a person nominated by the secretariat.
- 2.5 Both the respondent and the complainant will be entitled to lead evidence at the appeal, which evidence shall be restricted to that led before the Inquiry Panel.
- 2.6 In the event that the respondent is not a first language English speaker he / she has the right to request the services of an interpreter or fellow staff member to aid him during the Appeal hearing with translation at his own cost.
- 2.7 The Appeal Panel is obliged to provide written confirmation of their findings and reasons therefore within 14 (fourteen) days of date of hearing.
- 2.8 The decision of the Appeal Panel is final and binding on both the complainant and the respondent.

3. Right of review

- 3.1 In the event that either the complainant or the respondent are aggrieved by a procedural decision of the Inquiry Panel, he or she has the right to lodge an application for review with the SAIW Certification Administration within 20 (twenty) days of receipt of notice of the outcome of the Complaints Inquiry.
- 3.2 SAIW Certification Administration will inform the relevant Scheme Committee or the ANBCC Certification Board, which shall appoint a Review Panel.
- 3.3 The Review Panel will review the decision of the Inquiry Panel within 4 (four) weeks of being appointed by the relevant Scheme Committee or the ANBCC Certification Board and will notify the respondent and complainant of its decision within 7 (seven) days of the review meeting.
- 3.4 The decision of the Review Panel is final and will be binding on both the respondent and complainant.

4. Appeals against SAIW Certification

- 4.1 Any applicant, candidate or certified person or organisation may submit a complaint in writing to SAIW Certification Administration regarding any decision of a Scheme Committee or the ANBCC Certification Board in connection with any part or the whole of the certification or qualification process (including the decision to recommend or not to recommend any person or organisation for Certification to the Governing Board, or the decision to certify any person taken by a scheme committee or the ANBCC Certification Board in terms of any authority delegated to it by the Governing Board).
- 4.2 The Governing Board will meet as soon as is reasonably practicable to consider the complaint. The Governing Board will dismiss the complaint if it has no merit, and take whatever action it deems appropriate in the circumstances where it finds that the complaint has merit.
- 4.3 The Governing Board will consider the complaint on the papers before it, and must request that the person who laid the complaint, or the person against whom the complaint is laid, submit written representations and supporting documentation in respect of the complaint.

- 4.4** The Governing Board is entitled to withhold its decision and reasons therefore for any period of time that is reasonable in the circumstances, where it is not in a position to make an informed decision for lack of evidence, information or otherwise.
 - 4.5** The person who laid the complaint and the person against whom the complaint was laid has the right to be notified of the decision of the Governing Board, together with reasons therefore, together with the details of the relevant accreditation body, within 14 (fourteen) days of the decision being taken.
 - 4.6** A complainant or respondent that is unsatisfied with the decision of the governing board may appeal to the relevant accreditation body in event that it is not satisfied with the decision of the Governing Board.
- 5.** The complainant and the respondent understand their rights as set out hereinabove and hereby agree to be bound by any decision taken by the SAIW Certification Governing Board, any Scheme Committee, the ANBCC Certification Board or any Complaints Panel, Inquiry Panel, Review Panel or Appeal Panel in terms hereof.