

FOCUS ON INSPECTION

By Linda Grundlingh

1. NEW FIELD OF ACCREDITATION IN INSPECTION – ENERGY PERFORMANCE CERTIFICATES FOR BUILDINGS (SANS 1544:2014)

(Courtesy of Nelius Bekker).

Although the issuing of Energy Performance Certificates (EPCs) is in its infancy in South Africa, indications are that the regulation on Energy Performance Certificates (EPCs) under Section 19 of the National Energy Act will be promulgated in the near future, it is well established in the rest of the world. Building certification, originally focusing on heating appliances, can be traced back to the early eighties, whilst the origin of EPCs date from 1997 when Denmark introduced energy certification, focusing on heating, electricity and water consumption, of homes and buildings. Countries like Denmark, Norway, China, Brazil, Turkey and Australia, along with the majority of the other EU Member States, all have mandatory requirements for building or energy rating programmes.

Currently South Africa has regulations prescribing building standards that need to be met for building plans to be approved. The two applicable standards are *SANS 10400-XA: Energy Usage in Buildings* and *SANS 204: Energy Efficiency in Buildings*. These focus on pre-construction, or pre-renovation, of buildings. This can however be viewed as an

open-loop system, since there is no feedback from existing or newly constructed buildings once these are operational. EPCs enable this to become a closed-loop system by providing feedback, through e.g. compliance check results, energy performance registers, etc. This feedback would enable tracking of a buildings' energy performance. This data can in turn be used to update standards and regulations. The new standard, *SANS 1544:2014: Energy performance certificates for buildings* has been published and therefore the final link in the chain is the promulgation of regulations on Energy Performance Certificates.

Indications from the latest draft National Energy Efficiency Strategy are that the mandatory display of EPCs will commence with government owned properties, followed by buildings being rented by government. From there it will be rolled out to new construction and possibly, after assessing the cost-effectiveness, to existing buildings. It is anticipated that energy performance certificates will play an integral part in South Africa's efforts to become a more energy efficient country.

On 21 July 2017 Energy Management and Validation Services (Pty) Ltd (EMVS) became the first SANAS accredited Inspection Body for Energy performance certificates (EPCs) for buildings.

2. OCCUPATIONAL HYGIENE – NOISE MONITORING BY MEANS OF PERSONAL DOSIMETRY

(Courtesy of Garth Hunter).

2.1 Existing Regulation

The existing Regulations states:

(2) In order to comply with subregulation (1) (d), an employer shall ensure--

- a) that the measurement programme, in the case where a number of employees work in an area of approximately equal noise level, makes provision for the selection of not less than three locations which are representative of the positions occupied by employees well distributed over the area under investigation, and for the taking of measurements at each position as contemplated in SABS 083;
- b) that the measurement programme, in the case of an employee working at an approximately fixed location relative to the noise source, makes provision for the measurement to be taken at the approximate position of the person's ear that receives the higher noise level as contemplated in SABS 083; and
- c) that representative measurements are carried out at least every 24 months: provided that whenever the noise is at or over above noise-rating limit, the provisions of regulation 10(1) shall apply.

2.2 Occupational Hygiene – Amendment to Act No. 85 of 1993:

The following amendment was issued as R.889 of 2017 on 22/06/2017:

(G.G. 41065 of 25/08/2017)

DEPARTMENT OF LABOUR

INCLUSION OF NOISE MONITORING BY MEANS OF PERSONAL DOSIMETRY IN REGULATION 7 OF THE NOISE INDUCED HEARING LOSS REGULATIONS

In terms of section 43 (1)(b)(v) of the Occupational Health and Safety Act 1993 (Act No. 85 of 1993), the following amendment was added: Noise monitoring by means of personal dosimetry, for employees potentially exposed to noise at or above the noise rating limit, whom are neither working in all area of approximate equal noise level or fixed location to supplement the measures in regulation 7 (2) of the Noise Induced Hearing Loss Regulations with effect from the date of publication of this notice. Such personal dosimetry shall be conducted as contemplated in SANS 10083.

So where people work in a single location and are exposed to varying noise levels or where workers move from place to place, (“rove”), noise dosimetry is added as a method **to Supplement** 7(2). So what does “**to supplement**” mean. Common definition (where no definition is given common definition is to be used) is “added to something else in order to complete or enhance it”. So we have to add in noise dosimetry.

2.3 SANS 10083

What does SANS 10083 require?

8.3.3 Personal dosimetry

For employees who do not have a fixed workplace and move around from one position to another (for example supervisors, overseers, maintenance staff, drivers of vehicles and equipment) use may be made of personal noise dosimetry in accordance with annex D.

Essentially Annexure D just describes how to go about using a noise dosimeter, it doesn't require:

1. That dosimetry measurements have to be taken for every Similar Exposure Group (SEG);
2. How many noise dosimetry measurements have to be taken per SEG;

2.4 Reasonable approach:

Because detail is not provided, flexibility in approach may be applied, but the approach must still be in line with that of a “reasonable person / reasonable hygienist”, which it is suggested aligns to using a risk based approach to supplement static measurements.



2.5 Analytical approach:

Note that in order to accurately map noise exposure using noise dosimetry, which demonstrates a similar range of variation as chemical monitoring, a statistical based approach needs to be taken, where the Geometric Standard Deviation (GSD) is used of the measure of variation for the SEG and the number of samples considered in the same way as for chemical sampling.

Additionally, with noise there must be consideration of data collected on the logarithmic scale (dBA) for use in tools designed for use with linear measurements. This can be remedied by converting and analysing dose %, which is on a linear scale.

2.6 Extract from SANS 10083, Annex D

Annex D

(informative)

NOTE This noise exposure level is not the same as the A-weighted sound exposure level referred to in SANS 10103

D.1 Procedure using sound exposure

D.1.1 Sound exposure meter

For personnel without fixed work locations (for example, supervisors, overseers, maintenance staff and drivers of vehicles) or for personnel who have been identified as being unduly sensitive to noise -induced impairment of hearing, the value of the A-weighted sound exposure (EAT) can be with the relevant accuracy requirements of IEC 61252.

D.1.2 Procedure

The personal sound exposure meter should be worn in accordance with the manufacturer's instructions. Position the microphone of the sound exposure meter approximately 0,10m from the ear that receives the higher value of rating level.

NOTE 1: A helmet or frame can be used to support the microphone

NOTE 2: The microphone should be positioned on the shoulder of the employee, if convenient.

Note 3: If the measuring instrument or parts of it are worn on the employee, care should be taken not to disturb the performance of the person and especially not to introduce safety risks. Similarly, care should be taken to avoid misuse of the instrument measurements.

3. GAS TEST STATIONS – IMPORTANT NEWS:

3.1 BS 5045 – CO2 extinguishers with incomplete stamping to be condemned

Due to the fact that CO2 extinguishers from overseas did not go through the conformity review process, some units have been confirmed to have incomplete manufacturing stampings and these cylinders have to be condemned.

Gas test stations have by time picked up on these non-conformances and as the national standards DO NOT allow manufacturing stampings to be altered or completed, these cylinders were condemned. It has come to the attention of the SAQCC Fire that there were quite a lot of cylinders with the stamping BS 5045 in the market imported by the then approved manufacturer, Hilay Sales. This stamping is incomplete and these cylinders would have had to be condemned. Due to the quantity of units in the market, the SAQCC approached DOL in November 2016 for a possible concession to allow these units in service. However, DOL instructed that the cylinders had to be submitted to an accredited laboratory to test it to BS 5045 Part 1. The result was that the cylinders failed the hardness, bend and tensile tests. Based on these results, the SAQCC decided not to request a concession for these cylinders. Consequently, competent persons are advised that these cylinders stamped BS 5045 on the shoulder are NOT COMPLIANT and have to be condemned. Any further queries on this matter can be followed up with the chairperson of SAQCC Fire, Lizl Davel, or with an accredited local gas test station."

Those test stations that regularly handle the inspection and testing of fire extinguishers will no doubt already be aware of the contents of the SAQCC newsletter. Whilst the SAQCC-Fire newsletter was distributed to its members, this newsletter was sent to all Gas Test



Stations by SANAS to ensure that the contents and requirements are widely received and understood.

Please note that the contents of the SAQCC newsletter is specific to incorrectly stamped seamless steel CO2 Fire Extinguishers. For all other cylinders, the scrapping requirements are as indicated in SANS 10019 and/or SANS 1825.

When Gas Test Stations come across non-compliant CO2 Fire Extinguishers and condemn/scrap these cylinders, they must please inform the Department of Labour (Ms Matlala Sathekge, matlala.sathekge@labour.gov.za), of this.

3.2 Regulatory structures having an impact on gas test stations and cylinder owners/users, with regard to the implementation of the requirements of SANS 10019

Regulatory structures having an impact on gas test stations and cylinder owners/users, with regard to the implementation of the requirements of SANS 10019 and SANS 1825, where cylinders fail the statutory inspection and/or test and are required to be scrapped.

Part 1: Applicable legislation

a) Occupational Health and Safety Act 85 of 1993

Section 44 of the Act Section 44(3) of the Act states that any health and safety standard incorporated in the regulations under sub section (1) shall for the purposes of this Act, in so far as it is not repugnant to any regulation made under Section 43, be deemed to be a regulation, but not before the expiry of two months before the incorporation thereof.

b) Pressure Equipment Regulations: Regulation 18 -Transportable Gas Containers

1. No user shall use, require or permit a transportable gas container to be used, and no user shall fill, place in service, handle, modify, repair, inspect or test any transportable gas container, other than in compliance with the relevant standards incorporated into these regulations under section 44 of the Act.

2. The inspections and test referred to in sub regulation (1) shall be carried out by an approved testing station.

Regulation 19 -Fire Extinguisher

1. No user shall use, require or permit a fire extinguisher unless designed, constructed, filled, recharged, reconditioned, repaired, inspected or tested in accordance with the relevant standards incorporated into these regulations under section 44 of the Act Guidance Note a). High Pressure rechargeable containers which are used as CO2 fire extinguishers, shall only be revalidated by an organisation which has been accredited to SANS 1825. Fire extinguisher test stations accredited to SANS 1475 are not allowed to inspect or test high pressure rechargeable CO2 fire extinguishers.

Part 2: Standards incorporated in the PER

a) SANS 10019

Method of incorporation: By means of a Government Notice published in a Government Gazette.

Note: SANS 1825 is a normative reference in SANS 10019 and is therefore by extension deemed to be incorporated in the PER.

SANS10019 Relevant clauses, tables and annexures:

Clause 7.1

Only an approved test station shall carry out periodic inspection and testing (revalidation). The frequency of inspection and hydrostatic testing shall be in accordance with the requirements of SANS 1825.

Note: For ease of reference, the frequency of inspections and testing is given in annex C.

Note: Annex C is normative.

Clause 7.2 Test Stations

7.2.1 Approval

All test stations shall be approved by an approving authority.



7.2.2 Accreditation

Before approval, the test station shall be accredited by a government-endorsed national accreditation body to an agreed scope between the test station and SANAS (see SANS 17020 and SANS 1825).

7.3 Safety Precaution

Cylinders that are overdue for inspection and testing shall not be refilled.

7.4 Rejection and rendering pressure receptacles unserviceable

When pressure receptacles are to be rejected (scrapped), this function shall be carried out by a competent person.

The decision to reject a pressure receptacle may be taken at any stage during the inspection and testing procedure. If it is impossible to recover a rejected pressure receptacle, it shall, after notifying the owner, be made unserviceable by the testing station for holding gas under pressure so that it is impossible for any part of the cylinder, especially the shoulder, to be re-issued into service. **In case of any disagreement, the test station and owner shall understand the legal implication of the contemplated action.** Rejection and disposal criteria for pressure receptacles and methods for rendering pressure receptacles unserviceable shall be as given in SANS 1825. For the rejection criteria of LPG pressure receptacles, the rejection criteria given in the relevant tables in SANS 1825 shall apply.

Should the owner scrap or reject his own pressure receptacles, the rejection criteria shall be as provided in SANS 1825, and an approved test station shall dispose of the pressure receptacle in the appropriate manner.

9.1 General

Before filling, an inspection shall be performed as specified in this clause. Should the cylinder fail based on the rejection criteria the owner shall ensure the disposal of the cylinder is carried out as per SANS 1825 or shall be sent to an approved test station for further examination or disposal.

The rejection criteria are in accordance with SANS 1825, based on ISO standards.

b) SANS 1825

Relevant clauses tables and annexures:

7.3 Where the following information is missing on a pressure receptacle, the pressure receptacle shall be scrapped:

a) Design specification; notwithstanding the above requirement, where the design specification is not stamped on the cylinder, and the cylinder owner is able to obtain written evidence of the manufacturing design standard from the manufacturer and a copy of the original manufacturing certification for the cylinder(s) in question, then the design standard shall be stamped on the cylinder(s) by the approved test station and the cylinder(s) may then be tested.

b) Test pressure: (for Department of Transport (DOT) and the Canadian Interstate Commerce Commission (ICC) cylinders, the service pressure).

9.3 Incorrect pressure receptacle markings

Pressure receptacles with unknown gas content, or those that cannot be safely emptied of gas, shall be set aside for special handling, in accordance with documented procedures. Cylinders with incorrect markings or illegible markings or markings that are missing shall be rendered unserviceable (see 7.2).

9.4 Damaged pressure receptacles

Any cylinder damaged beyond the failure limits indicated in the applicable standard in 4.1 shall be scrapped and shall not be sent for repair or re-working. The owner/user of such cylinder(s) shall be informed of this action in writing.

9.5 Resale of scrapped/rejected pressure receptacles

9.5.1 The decision to reject a cylinder may be taken at any stage during the inspection and testing procedure. If it is impossible to recover a rejected cylinder, the test station shall, after the owner has been notified, make the cylinder unserviceable for holding gas under pressure so that it is impossible for any part of the cylinder, especially the shoulder, to be re-issued into service. **In case of any disagreement, the test station shall ensure that the legal implication of the contemplated action is fully understood.**



9.5.2 *Scrapped or rejected cylinders shall not be resold to a third party other than a scrap merchant. When cylinders are to be sold as scrap, such cylinders shall be deformed by an approved test station to prevent them from being used again. The filling station or test station shall ensure that any cylinder that does not comply with the design standard is scrapped (see also 9.4).*

9.5.3 *Before any of the following steps are taken, care shall be taken to ensure that the cylinder is empty (see 9.2).*

The following are recommended methods for rendering a cylinder unserviceable:

- a) Crushing the cylinder using mechanical means;*
- b) Burning an irregular hole in the top dome equivalent in area to approximately 10 % of the area of the top dome, or piercing the cylinder shell in at least three places;*
- c) Irregular cutting of the neck;*
- d) Irregular cutting of the cylinder into two or more pieces, including the shoulder; and*
- e) Bursting the cylinder using a safe method.*

Part 3: Legal implication if failed cylinders are not made unserviceable and scrapped by the gas test station:

As the above applicable standards are incorporated into the PER they become a regulation. See the notes under Part 1 of this article.

As such, failure to adhere to the prescripts of a regulation brings with such action the application of penalties. These are prescribed in Regulation 20 of the PER.

Gas test stations and cylinder owners/user are also referred to the Act itself specifically sections 9, 10, 15, 37 and 38.

The penalties for infringement of the requirements of the Act and its regulations can be a high as R100 000 and may also result in imprisonment.

There are additional requirements on gas test stations with respect to their accredited status. All inspection bodies have an obligation to carry out their duties and responsibilities impartially and shall not be influenced by any undue pressure. In the event that they release

a failed cylinder back to the owner/user, even under duress, they have failed to act impartially. This is a serious non-compliance with possible consequences for the gas test station.

Requiring the owner/user to sign a release declaration absolving the gas test station of any responsibility with respect to the cylinder in question or any resultant events has no value, as the gas test station cannot pass its responsibilities onto another person or persons.

In the event that the cylinder owner insists that the cylinder be returned to him or her without making it unserviceable the gas test station is recommended to contact the local Department of Labour offices and request a visit by an inspector to which the cylinder owner be invited to attend.

Gas test station operators are advised to beware of allowing cylinder owners to remove the cylinder from their premises on a statement that the owner/user will take it to another gas test station. Once the owner has taken the cylinder, the gas test station has no control over what happens to the cylinder, e.g. whether it is retested and passed or whether it simply gets put back into service.

Very often the gas test station will arrange for the cylinder in question to be retested by another accredited gas test station with the required scope, in order to verify the results they have obtained from their own inspection and test processes. This is a sub-contracting activity and the requirements of clause 6.3 of SANS 17020 must be followed. The cylinder owner/user may not play any part in the retest process.

Part 4: Guidance notes for Gas Test Stations

The notes below are aimed at reducing the risk of gas test stations coming under undue pressure when advising clients that one or more of their cylinders are to be made unserviceable and scrapped.

This type of situation normally arises when the owner/user is taken by surprise at such news as he/she was not previously aware or made aware by the gas test station of the circumstances when it may be necessary to scrap a cylinder, or the legal requirements placed on gas test stations **and** cylinder owners/users.



It is suggested that there is a fairly simple and cost effective process that could be followed in order to reduce the risk of disputes arising between gas test stations and the cylinder owners on this subject. This is by advising the cylinder owners at the time the cylinders are received for inspection and test, information on the action to be taken in the event that cylinder fail to pass any of the inspection and /or test requirements in SANS 10019/SANS 1825.

This could be done by means of providing the cylinder owner/user with a copy of this technical bulletin at the time the cylinders are booked in, and/or adding a suitably worded clause in the Conditions of Business to indicate that in the event a cylinder fails then it shall be scrapped and made unserviceable.

Gas test stations may elect to take a second opinion on the pass/fail status of an inspected cylinder by submitting it to another accredited gas test station. It is recommended that where this happens, the owner/user is made aware of any cost implication in this process.

By following the above process gas test stations will significantly reduce the incidences of disputes between themselves and their clients. They will have empowered themselves and their the clients by providing **direct knowledge on the legal implications of any contemplated action, as referred to in SANS 10019 and SANS 1825** with respect to the action taken on cylinders that fail the inspections and/or tests. This therefore meets the requirements of clause 7.4 of SANS 10019 and 9.5.1 of SANS 1825.

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