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## SANS 5956 Acid gas evolved during combustion of cable materials

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### BACKGROUND

SANS 60754-1:2015/IEC 60754- 1:2011 and SANS 60754-2:2015/IEC 60754- 2:2011 has been withdrawn and superseded by:

IEC60754- 1:2011+AMD1:2019: *Test on gases evolved during combustion of materials from cables Part 1: Determination of the halogen acid gas content, and..*

IEC60754- 2:2011+AMD1:2019: *Test on gases evolved during combustion of materials from cables Part 2: Determination of acidity by measuring pH and conductivity.*

SANS 1411-5: *Test on gases evolved during combustion of materials from cables Part 5: Test on gases evolved during combustion of materials from cables, references IEC60754- 2.*

SANS 1507-5: *Electric Cables with extruded solid dielectric insulation for fixed installations insulation Part 5: Halogen free distribution cables, references SANS 5956; Acid gas evolved during combustion of cable materials*

The SABS TC66 have requested members of the TSC to consider the withdrawal and recommendation for replacement of the standard SANS 5956; Acid gas evolved during combustion of cable materials which is referenced by SANS 1507-5.

This standard is to be withdrawn and replaced with SANS IEC 60754-1 & 2: *Test on gases evolved during combustion of materials from cables.*

### COMPARISON OF THE STANDARDS

A high level comparison between the two standard is provided below:

Item	SANS IEC 60754-1 and 2	SANS 5956
1	Internationally aligned	Local standard
2	Allows potentiometer (Automatic titration - faster)	Hand titration -Slower
3	More accurate (Elimination of visual perception of titrator)	Rely on titrator 's color perception (Human element)
4	Cost of disposing hazardous waste chemicals reduced	Cost of disposing hazardous waste is increased
5	Lab equipment mostly as per SANS IEC	Expenses will be required by laboratories who are not aligned
6	Mohr's titration with direct titration	Volhards method with back titration
7	Latest methods and equipment	Outdated

Local laboratory test equipment is generally in accordance to SANS IEC 60754 Part 1 and Part 2. The adoption of Part 3: (*Measurement of low level of halogen content by ion chromatography*), is not recommended.

SANS IEC 60754-1 allows other analytical methods (than given in the standard) to be used for determination of the halogen acid gas content. SANS 5956 does not allow this.

The standard uses the Volhards method with a back titration. The Mohrs method with direct titration and a potentiometer eliminates error due to analyst colour perception. The cost of disposing hazardous waste chemicals are also drastically reduced using this method.

SANS 5956 includes both methods for part A (% HCL) and part B (pH/conductivity). The wash bottles for part B has to be specially designed to measure pH/conductivity during combustion.

Wash bottles used by some laboratories do not comply with SANS 5956 for pH/conductivity. Also some laboratories are unable to measure pH/conductivity during combustion.

#### **RECOMMENDATION**

The AECMSA recommends for the SANS TC66 committee to withdraw SANS 5956 and replace the reference in SANS 1507-5 with SANS IEC 60754-1 and 2.