



African, Caribbean and Pacific Group of States

“COMESA SQAM Action Plan in 3 sectors: Cotton, textiles and garment, light engineering and chemicals and chemical products”

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LIGHT ENGINEERING SECTOR NEEDS ASSESSMENT and IMPLEMENTATION PLAN REPORT

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Acronyms

ACP	AFRICA, CARIBBEAN AND PACIFIC GROUP OF COUNTRIES
AFRAC	AFRICA ACCREDITATION COOPERATION
ARAC	ARAB ACCREDITATION COUNCIL
COMESA	COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA
EAC	EAST AFRICAN COMMUNITY
EGAC	EGYPT ACCREDITATION COUNCIL
EU	EUROPEAN UNION
IAF	INTERNATIONAL ACCREDITATION FORUM
IEC	INTERNATIONAL ELECTROTECHNICAL COMMISSION
ILAC	INTERNATIONAL LABORATORY ACCREDITATION COOPERATION
ISO	INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
MDAs	MINISTRIES, DEPARTMENTS AND AGENCIES
MRA	MUTUAL RECOGNITION AGREEMENTS
MRL	MAXIMUM RESIDUE LIMIT
NAB	NATIONAL ACCREDITATION BODY
NEP	NATIONAL ENQUIRY POINT
NMI	NATIONAL METROLOGY INSTITUTE
NQI	NATIONAL QUALITY INFRASTRUCTURE
NSB	NATIONAL STANDARDIZATION BODY
NTB	NON-TARIFF BARRIERS TO TRADE
OECD	ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
PSF	PRIVATE SECTOR FEDERATION
PT	PROFICIENCY TESTING
QI	QUALITY INFRASTRUCTURE
QM	QUALITY MANUAL
QMS	QUALITY MANAGEMENT SYSTEM
SADCAS	SOUTH AFRICA DEVELOPMENT COMMUNITY ACCREDITATION SERVICE
	SOUTH AFRICAN NATIONAL ACCREDITATION SYSTEM
SANAS	SMALL AND MEDIUM SIZE ENTERPRISES
SMEs	SANITARY AND PHYTO-SANITARY
SPS	STANDARDISATION, QUALITY ASSURANCE AND METROLOGY
SQAM	TECHNICAL BARRIERS TO TRADE
TBT	WORLD TRADE ORGANISATION
WTO	ZAMBIA BUREAU OF STANDARDS
ZABS	ZAMBIA CHAMBER OF COMMERCE AND INDUSTRY
ZACCI	ZAMBIA ASSOCIATION OF MANUFACTURERS



1. INTRODUCTION

The Common Market for Eastern and Southern Africa (COMESA) was formed in December 1994 to replace the former Preferential Trade Area (PTA) and was established as an organisation of free independent sovereign states which have agreed to co-operate in developing their natural and human resources for the good of all their people and as such it has a wide –ranging series of objectives which necessarily include in its priorities the promotion of peace and security in the region.

COMESA's Vision is to be a fully integrated, internationally competitive regional economic community with high standards of living for its entire people ready to merge into an African Economic Community. COMESA current Member states include: Burundi, Union of Comoros, Congo DRC, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Sudan, Swaziland, Seychelles, Uganda, Zambia and Zimbabwe. With this Tripartite Free Trade Agreement COMESA-SADC-EAC will enlarge economic trading unit with over 25 countries trading with each other.

The COMESA's Strategic Plan for Standardisation, Quality Assurance and Metrology (SQAM) provides a broad and comprehensive overview of COMESA possible future interventions in the area of SQAM and includes an implementation matrix where key strategic objectives, their expected duration as well as responsibilities and level of priorities are outlined. The overall objective of the project was to support the implementation of COMESA activities in the area of standardisation Quality Assurance and Metrology. It is intended to support the development of Quality Infrastructure at regional level and promote the development of synergies among different donor/funding mechanism.

The specific objectives included defining an implementation plan for future COMESA activities in the areas of Standardisation, Quality Assurance and Metrology in the following sectors: Cotton and garments, light engineering and chemicals and chemical products.

1.1 OBJECTIVE OF ASSESSMENT

The assessment objective was to find out the standardisation needs and gaps in light engineering sector, impact of COMESA SQAM activities in trade, and problems institutions face in their operations. Standards are important elements to the economy in a number of interdependent ways which support economic development through production of competitive products and enhance the quality of life. The three pillars of Quality Infrastructure (QI), Standardisation, Accreditation and Metrology are vital for sustainable development and regional trade.



1.2 METHODOLOGY

The methodology used for this exercise entailed a combination of both qualitative and quantitative tools, including interviews, questionnaires and review of documents supplied by COMESA Secretariat and other stakeholders as well as e-documentation from various recommended websites.

1.2.1 *Data collection*

Selected SMEs and COMESA Member states institutions/organisation mainly in Zambia were interviewed in order to assess standards implementation, knowledge and quality infrastructure and also to assess the gaps. COMESA Secretariat provided the documents regarding SQAM and COMSTAT statistics for trade flows in the region.

The field mission was carried out in Lusaka-Zambia, with the following target groups: COMESA Secretariat, focal points of Member states, other regional and continental organisations (SADC, EAC, ARSO), conformity assessment bodies, SMEs and Private Sector Associations/Organisations. The standards needs assessment was based on the perception of the stakeholders interacted with and it was not possible to evaluate the correctness or positivity of these findings.

1.2.2 *Strengths and Limitations*

Strengths:

- Standards information and trade statistics was readily available at COMESA secretariat.
- Questionnaire responses from COMESA member states stakeholders were very positive irrespective of the delayed delivery.

Limitations:

- Resource constraints in terms of time availed for the project was so limited too fully carry out a comprehensive detailed assessment of SQAM in light engineering sector.
- Geographical location.
COMESA comprises of 19 member states and it was impossible to reach to all stakeholders in these member states due to limitation of funds and interpretations of TORs. The mission was based in Zambia therefore all meeting, discussions and interviews were centred to Zambia stakeholders and this may not be a true reflection of other countries although questionnaires were distributed to all countries.
- Limited information on conformity assessment and proficiency testing agreements
- Due to inactive COMESA SQAM subcommittees, it was difficult to access information on accreditation, testing and quality assurance.

The key issues that arose during the interaction with SMEs and other organisations are all included in needs assessment together with recommendation in Annex 1A.



2. LIGHT ENGINEERING SECTOR SITUATION ANALYSIS

2.1 LIGHT ENGINEERING SECTOR STANDARDS ANALYSIS

COMESA harmonised standards in the light engineering sector are very limited to cover the number of commodities being traded in the COMESA region. There are 160 COMESA harmonised standards in light engineering sector with 94 valid CHS and 66 standards under review. This is a limitation to trade facilitation within the region and internationally.

According to the trade data from UN COMTRADE and COMSTAT, there are various commodities being traded in light engineering sector in the COMESA region. These include but not limited to product code 85 -Electrical machinery and equipment and parts thereof; sound recorder, televisions; product code 74 – copper and article of; product code 84- machinery, mechanical appliances and parts thereof; product code 72 – iron and steel. Trade data show that Egypt is the biggest exporter of light engineering products especially product code 85 in the COMESA region and these include Reception apparatus for televisions, insulated wire/cable, electrical app for line telephony, coaxial cables, instantaneous water heaters, electric conductors, board, cabinets and similar apparatus, television receivers, diodes, motors, primary cells and primary batteries, reception receivers etc; product code 84 – machinery, mechanical appliances parts thereof and product code 72- iron and steel. Zambia is the biggest exporter of copper and articles of (product code 74) and this brings Zambia's total export value higher than Egypt. Full detailed statistics are shown in the annex 1C for a period of 5 years (2011-2015) for all COMESA Member States.

Table below shows the summary of the major exporting countries in COMESA region and their export values for a period of 5 years.

COUNTRY	TOTAL EXPORT VALUE IN US\$ '000s (Light Engineering Sector)				
	2011	2012	2013	2014	2015
Egypt	3203169	2642384	2662248	3092838	2380681
Zambia	7149817*	6615652*	7273121*	7516463*	5359809*
Mauritius	62156	89622	116806	367216	381257
Kenya	378893	-	311684	313343	213473
Zimbabwe	158658	179076	212687	334062	196154
Uganda	275210	310824	224222	175307	180836

Source: Trade statistics UN COMTRADE data. (NB: * Copper exports contribute biggest percentage in Zambia)



Due to the total number of exports in this sector, the harmonised standards available cannot meet demand available in the sector. Below is summary of the COMESA Harmonised Standard situation analysis in light engineering sector

	Number	<i>Light engineering sector</i>
COMESA Harmonised Standards (CHS)	385	<i>160</i>
Valid CHS	218	<i>94</i>
CHS Due for review	167	<i>66</i>
CHS Under development		<i>1</i>

There are over 150 light engineering products being traded in regionally and internationally. Most of these products do not have CHS standards and some standards are no longer valid. The need for the COMESA to encourage its member states to adopt some of these existing international standards (see annex 1D) so that they are harmonised as COMESA Standards by COMESA subcommittee on standards harmonisation. Also COMESA could adopt or harmonise standards with EAC and SADC harmonised standards in order to support the tripartite free trade agreements and hence free movement of goods.

Harmonisation of standards is an essential requirement for economic integration in COMESA because they assist to eliminate TBTs, boost trade among partner states, increase competitiveness, prevent deceptive practices in business transactions and encourage free movement of goods within the region.

Some of the identified standardisation gaps include: lack of information on standards available in sector; inadequate product standards to satisfy regional and international markets; inadequate or no collaboration between stakeholders (regulators & implementers); low implementation of standards amongst SMEs; understanding and interpretation of standards in sector; inadequate testing facilities and inadequate accreditation centres.

2.2 SME COMPLIANCE ASSESSMENT

There is limited knowledge on standards availability among SMEs hence limited implementation of standards. Most SMEs have no knowledge of COMESA harmonised standards or ZABS standards available in the sector and how they can access these standards for their use. There is need to create awareness on COMESA SQAM activities amongst SMEs for compliance and implementation purposes. In addition, there are limited testing facilities in the sector to support trade hence limited compliance to SQAM activities.

Technology change is also another hindrance in the standards implementation since most SMEs are still using out-dated technologies and yet to embrace new technology.



There is need for capacity building in standards best practices and modern technological standards applicable in the sectors.

Currently there are no active NTBs in light engineering sector although there are still regulatory issues on the vehicle standards between various countries in COMESA region. Previously there was an NTB on refrigerators between Swaziland and Zimbabwe which has been resolved and it was mainly on rules of origin. Within COMESA region a lot of efforts have been deployed to address issues of NTBs and NTB regulations have been developed and adopted by Council at its 33 meeting held in December 2014 in Lusaka, Zambia. In order to streamline NTB reporting, an online system of reporting, monitoring and eliminating NTBs was developed which provides systematic and transparent process for identification and elimination of trade barriers in Tripartite region (COMESA-EAC-SADC).

2.3 LABORATORY AND ACCREDITATION CENTER ASSESSMENTS

There are apparently few existing COMESA laboratory facilities in light engineering sector and these are mainly in member states that are leading producers or exporters of light engineering products such as Egypt, Kenya and Swaziland. In Zambia, there are a few accredited laboratories in the areas of metrology (mass, dimensions, pressure), water and condoms are located at ZABs. There are no accredited laboratories in the engineering sector to support trade in Zambia. In Egypt there are 10 accredited laboratories in the engineering sector with disciplines such as spectrometer analysis of iron, copper, aluminium and other alloys, chemical & mechanical testing of steel, Home appliances. Under SADC region, there are various accredited laboratories in South Africa, Zimbabwe that cater for various disciplines including telecommunications, civil engineering testing, mechanical testing, performance testing, chemical and metallurgy analysis and electrical testing. Most of these laboratories are accredited by SANAS and SADCAS bodies whose mission is to provide credible cost-effective accreditation services for SADC Member States.

Egypt has an accreditation center (EGAC) with recognition and relationships with ILAC, IAF, ARAC and AFRAC. Such centres could be established in other COMESA member states to support the trade liberalisation and also this will expedite the COMESA-SADC-EAC tripartite through MRAs. COMESA SQA Strategic plan on COMESA accreditation subcommittee encourages member states without National Accreditation Bodies to set up National Accreditation Focal Points. These focal points will help assist member countries in areas of mutual accreditation services.

Currently there are no active MRA in COMESA for light engineering sector although there are MRAs food sector such as MRL etc. There is need to set up regional accreditation services so as to have engineering laboratories accredited. This will facilitate the mutual recognition agreements since it will reduce technical barriers to trade allowing goods that have been tested in an exporting or another country to be



accepted by an importing country with minimal further testing or certification although will remain subject to market surveillance.

MRAs create framework for mutual recognition of national conformity assessment systems between two or more countries. There is need to accept test reports and certification marks in order to allow direct market entry of goods.

3. CONCLUSION

Trade in Light engineering sector has increased over the years registering a few NTBs that have since been resolved. Most of the registered NTBs were on rules of origin, government regulations and vehicle standards. There is need for standardisation awareness in COMESA SQAM activities amongst SMEs and other stakeholders to enable easy implementation of standards in the sector. CHS available standards are limited therefore need COMESA Subcommittee on harmonisation of standards to aggressively adopt and develop standards in sector to support trade. There is also a possibility of setting up MRAs in sector among conformity assessment bodies in COMESA member states that export products in this sector. Addressing all these recommendations and implementation plan will support the implementation of Tripartite Free Trade Agreements between COMESA-SADC-EAC hence expanding the regional market area.



ANNEX 1A: LIGHT ENGINEERING SECTOR NEEDS ASSESSMENT

AREA	FINDINGS	RECOMMENDATIONS
Standardisation	<ul style="list-style-type: none"> Lack of information on standards available in sector Inadequate product standards to satisfy regional and international markets Inadequate or no collaboration between stakeholders (regulators & implementers) Low implementation of standards amongst SMEs Understanding and interpretation of standards in sector No access to harmonised standards 	<ol style="list-style-type: none"> Awareness raising on standards development and harmonisation amongst SMEs Development of product standards in light engineering sector to meet requirements for regional and international markets Capacity building in good standard practices Encourage participation in harmonisation meetings for SMEs e.g. provide facilitation Establish collaboration amongst stakeholders to bridge the gap between regulators and implementers Publish COMESA Harmonised standards in sector to easy accessibility for SMEs light engineering sector Supportive quality infrastructure Training in Energy management system standard ISO 5001
Testing	<ul style="list-style-type: none"> Inadequate testing capacity to test all traded products in light engineering sector Non-existent proficiency testing scheme or inter-comparisons in sector 	<ol style="list-style-type: none"> Establishment of testing laboratories in light engineering sector Development of Proficiency Testing Scheme for member states i.e. Egypt, Kenya, Swaziland, Zimbabwe etc Capacity building for laboratory personnel in implementation of ISO 17025
Accreditation	<ul style="list-style-type: none"> Inadequate accreditation centres Inadequate accredited laboratory in light engineering sector 	<ol style="list-style-type: none"> Establish accreditation centres or NABs in COMESA members states (Kenya, Zimbabwe, Ethiopia) such as SADCAS, EGAC, SANAS etc Stakeholder sensitization on importance and benefits of accreditation
Quality Assurance	<ul style="list-style-type: none"> No existent MRA under light engineering sector No PTs available in light engineering sector 	<ol style="list-style-type: none"> Establishment of supportive quality infrastructure in light engineering sector Establishment of MRAs among COMESA member states to support the light engineering sector Encourage/ promote private sector participation in COMESA SQAM activities
Metrology	<ul style="list-style-type: none"> Poor standards on axle loads especially in transportation chain Too many weighbridges that cause unnecessary delays and very costly 	<ol style="list-style-type: none"> Harmonisation of axle loads or weighbridge standards Harmonisation of weight & measures regulations in COMESA member states Reduction of weighbridges along the transit transport chain in member states



ANNEX 1B: IMPLEMENTATION PLAN - LIGHT ENGINEERING SECTOR

Strategies	Activity	Actors	Key responsibilities	Time	Objective Verifiable Indicators (OVI)	Priority
Strengthen COMESA Standards harmonisation system to facilitate trade	<p>Identify international standards in Light engineering sector</p> <p>Encourage member states to adopt international standards in Light engineering sector</p> <p>Disseminate/publish harmonised standards catalogue</p> <p>Conduct awareness workshop on harmonised standards</p>	<p>COMESA Member states NSBs</p> <p>COMESA SQA Subcommittee on Standards Harmonisation</p> <p>Private sector associations</p>	<ul style="list-style-type: none"> Identify gaps in standards for traded goods Identify international standards in engineering sector for harmonisation. Develop COMESA harmonised standards catalogue Conduct awareness workshop on CHS standards 	1 year	<p>List of harmonised standards</p> <p>List of stakeholders that participated in workshop</p>	1
Mutual recognition of conformity assessment activities	Set up mutual recognition arrangements/mechanism	<p>COMESA Member states NSBs</p> <p>COMESA SQA Subcommittees NQIs</p> <p>COMESA Member states MINISTRIES OF TRADE & COMMERCE</p>	<ul style="list-style-type: none"> Engage a consultant to guide development of MRM Convene stakeholders meeting on MRM Presentation of draft MRM to Council of Ministers for approval 	1 year	<p>Easy movement of goods</p> <p>Draft MRM</p> <p>Outcomes form stakeholders meeting</p> <p>Approved MRM</p>	2



Strategies	Activity	Actors	Key responsibilities	Time	Objective Verifiable Indicators (OVI)	Priority
	Develop PTs / Inter-laboratory comparisons schemes in light sector	Quality Assurance & testing COMESA subcommittees or SADC/EAC subcommittees COMESA Member states Accredited laboratories in Light engineering sector	<ul style="list-style-type: none"> Engage a consultant Develop TORs Conduct peer assessment in member countries 	8months	No, of trained personnel No, of countries assessed	2
Support existing testing laboratories in light engineering sector	Provide testing equipment Train laboratory personnel Support laboratory accreditation	COMESA Member state NSBs Testing laboratories Private sector	<ul style="list-style-type: none"> Identify existing laboratories Identify necessary equipment Capacity building of personnel on ISO 17025 	1year	List of trained personnel List of equipment provided and laboratory names	1



ANNEX 1C: COMESA EXPORTS IN LIGHT ENGINEERING SECTOR – EXP VALUE IN US\$ 000s

Data source is based on UN COMTRADE statistics

PRODUCT CODE	EXPORT VALUE in US \$ '000s				
	2011	2012	2013	2014	2015
EGYPT					
Electrical machinery & equipment	1166612	1153693	1204814	1958631	1751691
Copper and articles of	614250	484092	295784	265406	195508
Machinery, mechanical appliances, parts there of etc	264715	229562	190228	246911	142446
Iron and Steel	1157592	775037	971422	621890	291036
MAURITIUS					
Electrical machinery & equipment	20138	42830	75668	329487	323451
Copper and articles of	3982	3700	316	183	744
Machinery, mechanical appliances, parts there of etc	19800	31370	30398	29195	50228
Iron and Steel	18236	11722	10424	8351	6834
KENYA					
Electrical machinery & equipment	84777		77005	62757	55135
Copper and articles of	13583		30754	47461	33556
Machinery, mechanical appliances, parts there of etc	98601		52385	106770	50320
Iron and Steel	181932		151540	96355	74462
ZAMBIA					
Electrical machinery & equipment	252704	65330	100765	69543	63025
Copper and articles of	6769660	6372937	6890103	7210758	5153413
Machinery, mechanical appliances, parts there of etc	71442	122582	227271	161646	93639
Iron and Steel	56011	54803	54982	74516	49732
UGANDA					
Electrical machinery & equipment	144938	176786	62907	18759	34354
Copper and articles of	166	92	191	354	100
Machinery, mechanical appliances, parts there of etc	51897	50637	66804	63065	59785
Iron and Steel	78209	83309	94320	93129	86597
ETHIOPIA					
Electrical machinery & equipment	3344	10494	7268	19833	30923
Copper and articles of	677	229	1	12	1897
Machinery, mechanical appliances, parts there of etc	8871	16674	28564	39214	20679
Iron and Steel	74	746	1038	1937	969



RWANDA					
Electrical machinery & equipment	2410	1552	4754	16550	12201
Copper and articles of	331	2290	1621	827	102
Machinery, mechanical appliances, parts there of etc	2002	2847	7003	23478	8888
Iron and Steel	1792	5274	5304	11980	1922
ZIMBABWE					
Electrical machinery & equipment	12536	12087	9412	12443	11431
Copper and articles of	7441	15474	25839	17091	5941
Machinery, mechanical appliances, parts there of etc	21199	17348	18052	21649	13819
Iron and Steel	117482	134167	159384	282879	164963
SUDAN (North + South)					
Electrical machinery & equipment	2045	40126	49357	17902	8760
Copper and articles of	13867	28995	45838	99286	26166
Machinery, mechanical appliances, parts there of etc	901	11488	5080	4504	2324
Iron and Steel	5946	15725	3219	1074	888
LIBYA					
Electrical machinery & equipment	3820	5440	15880	8118	8103
Copper and articles of	265	15878	38290	59460	40833
Machinery, mechanical appliances, parts there of etc	43545	18872	10164	48465	10617
Iron and Steel	105671	120587	120651	149424	97984
MADAGASCAR					
Electrical machinery & equipment	7271	4440	4908	5896	4238
Copper and articles of	1866	1827	73	1426	2636
Machinery, mechanical appliances, parts there of etc	43249	12447	17224	17007	20305
Iron and Steel	16384	12246	193	2136	239
MALAWI					
Electrical machinery & equipment	5813	2417	5679	18173	3823
Copper and articles of	8	141	16	397	225
Machinery, mechanical appliances, parts there of etc	8925	8175	13216	112863	39147
Iron and Steel	492	186	901	5539	1352
CONGO, DR					
Electrical machinery & equipment	2492	2676	3232	1545	2927
Copper and articles of	2485702	3475718	3402103	3793325	3027488
Machinery, mechanical appliances, parts there of etc	12972	14239	14077	14785	9496
Iron and Steel	3849	8804	9014	8529	9647
SEYCHELLES					
Electrical machinery & equipment	1971	5946	838	366	1536
Copper and articles of	19	13	16	7	4
Machinery, mechanical appliances, parts there of etc	2824	6205	4009	2454	1023
Iron and Steel	11	519	106	1	62
SWAZILAND					



Electrical machinery & equipment	1744	981	589	1233	1055
Copper and article of	2680	2054	1644	1758	1206
Machinery, mechanical appliances, parts there of etc	28734	18317	18555	21734	20865
Iron and Steel	5537	5825	4408	4045	1659
BURUNDI					
Electrical machinery & equipment	8149	687	1646	995	1033
Copper and articles of	0	10	2	1	0
Machinery, mechanical appliances, parts there of etc	2848	2698	69	2366	499
Iron and Steel	1886	1756	2771	3329	1844
COMOROS					
Electrical machinery & equipment	9	97	7	161	451
Copper and articles of	179	0	0	1	2
Machinery, mechanical appliances, parts there of etc	6	105	474	105	157
Iron and Steel	159	15	2	1005	314
DIJIBOUTI					
Electrical machinery & equipment	425	2294	506	741	347
Copper and articles of	183	200		224	12
Machinery, mechanical appliances , parts there of etc	1504	2587	2772	1896	737
Iron and Steel	1914	1773	2198	953	634
ERITREA					
Electrical machinery & equipment	598	1119	109	158	165
Copper and articles of	113	1	27	2	134
Machinery, mechanical appliances, parts there of etc	109	922	9537	233	235
Iron and Steel	1377	116	30	141	137



ANNEX 1D: LIST OF STANDARDS COMESA SHOULD CONSIDER DEVELOPING/HARMONISING

S/N	ITEM	NUMBER
1	Wrought Aluminium & aluminium alloys—sheets, strips and plates Part 1: Technical conditions for inspection	ISO 6361-1:2011
2	Wrought Aluminium & Aluminium alloys – sheets, strips and plates Part 2: Mechanical properties	ISO 6361-2:2014
3	Wrought Aluminium & Aluminium alloys- sheets, strips and plates Part 3: Strips -Tolerances on shape and dimensions	ISO 6361-3:2014
4	Wrought Aluminium & Aluminium alloys – sheets, strips and plates Part 4: Sheets and plates- Tolerances on shape and dimensions	ISO 6361-4:2014
5	Wrought Aluminium & Aluminium alloys- sheets, strips and plates Part 5: Chemical composition	ISO 6361-5:2011
6	Wrought aluminium and aluminium alloys – Extruded rods/bars, tubes and profiles – Part 1: Technical conditions for inspection and delivery	ISO 6362-1:2012
7	Wrought aluminium and aluminium alloys – Extruded rods/bars, tubes and profiles -Part 2: Mechanical properties	ISO 6362-2:2014
8	Wrought aluminium and aluminium alloys – Extruded rods/bars, tubes and profiles -Part 3: Extruded rectangular bars – Tolerances on shape and dimension	ISO 6362-3:2016
9	Wrought aluminium and aluminium alloys – Extruded rods/bars, tubes and profiles -Part 4: Profiles – Tolerances on shape and dimensions	ISO 6362-4:2016
10	Wrought aluminium and aluminium alloys – Extruded rods/bars, tubes and profiles -Part 5: Round, square and hexagonal bars – Tolerances on shape and dimensions	ISO 6362-5:2016
11	Wrought aluminium and aluminium alloys – Extruded rods/bars, tubes and profiles- Part 6: Round, square, rectangular and hexagonal tubes—Tolerances on shape & dimensions	ISO 6362-6:2016
12	Wrought aluminium and aluminium alloys – Extruded rods/bars, tubes and profiles- Part 7: Chemical composition	ISO 6362-7:2016
13	Aluminium and aluminium alloys – Chemical composition	ISO 209:2007
14	Aluminium-magnesium-silicon alloy wire for overhead line conductors	IEC 60104:1987
15	Conductors of insulated cables	IEC 60228:2004
16	Rubber Insulated cables—Rated voltages up to and including 450/750V Part 1: General requirements	IEC 60245-1:2007
17	Rubber Insulated cables - Part 3: Heat resistant silicone insulated cables	IEC 60245-3:1994
18	Rubber Insulated cables – Rated voltages up to and including 450/750v Part 4: Cords and flexible cables	IEC 60245-4:2011
19	Rubber Insulated cables- Rated voltages up to and including 450/750v Part 5: Lift cables	IEC 60245-5:1994
20	Rubber Insulated cables – Rated voltages up to and including 450/750v Part 6: Arc welding electrode cables	IEC 60245-6:1994
21	Rubber Insulated cables – Rated voltages up to and including 450/750v Part 7: Heat resistant ethylene-vinyl acetate rubber insulated cables	IEC 60245-7:1994
22	Rubber Insulated cables – Rated voltages upto and including 450/750v Part 8: Cords for applications requiring high flexibility	IEC 60245-8:2012
23	Audio, Video and similar electronic apparatus- safety requirements	IEC 60065:2005
24	Lamp caps and holders together with gauges for control of interchange ability and safety- Part 1: Lamps caps	IEC 60061-1:2007



25	Lamp caps and holders together with gauges for control of interchange ability and safety- Part 2: Lamp holders	IEC 60061-2:2007
26	Power transformers – Part 1: General requirements	IEC 60076-1:2011
27	Power transformers –Part 5: Ability to withstand short circuit	IEC 60076-5:2006
28	Primary batteries- Part 1: General requirements	IEC 60086-1:2011
29	Primary batteries- Part 2: Physical and electrical specifications	IEC 60086-2:2011
30	Primary batteries –Part 4: Safety of lithium batteries	IEC 60086-4:2007
31	Primary batteries – Part 5: Safety of batteries with aqueous electrolyte	IEC 60086-5:2011
32	Lead-acid starter batteries –Part 1: General requirements and methods of test	IEC 60095-1:2006
33	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750v – Part 1: General requirements	IEC 60227-1:2007
34	Polyvinyl Chloride insulated cables of rated voltages up to and including 450/750v – Part 5: Flexible cables (cords)	IEC 60227-5:2011
35	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750v – Part 7: Flexible cables screened and unscreened with two or more conductors	IEC 60227-7:2012
36	Conductors of insulated cables	IEC 60228:2004
37	Household and similar electrical appliances – safety- Part 1: General requirements	IEC 60335-1:2010
38	Household and similar electrical appliances- safety- Part 2-2:Particular requirements for vacuum cleaners and water-suction cleaning appliances	IEC 60335-2-2:2002
40	Household and similar electrical appliances – safety-Part 2-6: Particular requirements for stationary cooking ranges, hobs, ovens and similar appliances	IEC 60335-2-6:2008
41	Household and similar electrical appliances – safety –Part 2-7: Particular requirements for washing machines	IEC 60335-2-7:2012
42	Household and similar electrical appliances – safety-Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and ice makers	IEC 60335-2-24:2012
43	Household and similar electrical appliance- Safety- Part 2-89: Particular requirements for commercial refrigerating appliances with an incorporated or remote refrigerant condensing unit or compressor	IEC 60335-2-89:2002
44	Power cables with extruded insulation and their accessories for rated voltages from 1kV($U_m=1,2$ kV) up to 30 kV ($U_m=36$ kV) –Part 2: Cables for rated voltages from 6 kV ($U_m=7,2$ kV) up to 30 kV ($U_m=36$ kV)	IEC 60502-2:2014
45	Power cables with extruded insulation and their accessories for rated voltages from 1kV($U_m=1,2$ kV) up to 30 kV ($U_m=36$ kV) – Part 1: Cables for rated voltages from 1 kV ($U_m=1,2$ kV) up to 3 kV ($U_m=3,6$ kV)	IEC 60502-1:2009
46	Boxes and enclosures for electrical accessories for household and similar fixed electrical installations – Part 1: General requirements	IEC 60670-1:2002
47	Boxes and enclosures for electrical accessories for household and similar fixed electrical installations – Part 22: Particular requirements for connecting boxes and enclosures	IEC 60670-22:2003
48	Photovoltaic devices – Part 2: Requirements for photovoltaic reference devices	IEC 60904-2:2015
49	Ballasts for tubular fluorescent lamps – Performance requirements	IEC 60921:2004



50	Self-ballasted lamps for general lighting services – Performance requirements	IEC 60969:1999
51	Self-ballasted lamps for general lighting services- Safety requirements	IEC 60968:1999
52	Safety of power converters for use in photovoltaic power systems – Part 1:General requirements	IEC 62109-1:2010
53	Road Vehicles – Types – Terms and definitions	ISO 3833-1977
54	Road Vehicles – Dimensions of motor vehicles and towed vehicles	ISO 612:1978
55	Secondary cells and batteries for renewable energy storage- General requirements and methods of test- Part 1: Photovoltaic off-grid application	IEC 61427-1:2013
56	Secondary cells and batteries for renewable energy storage –Part 2: On grid application	IEC 61427-2:2015
57	Terrestrial photovoltaic modules- Design qualification and type approval;- Part 1: Test requirements	IEC 61215-1:2015
58	Terrestrial photovoltaic modules- Part 1-1: Special requirements for testing of crystalline silicon photovoltaic modules	IEC 61215-1-1:2016
59	Terrestrial photovoltaic modules –Part 2: Test procedures	IEC 61215-2:2016
60	Photovoltaic devices- Part 2: Requirements for photovoltaic reference devices	IEC 60904-2:2015
61	Non-alloy steel rod for drawing and/or cold rolling – Part 1: General requirements	ISO 16120-1:2011
62	Non-alloy steel rod for drawing and/or cold rolling- Part 2: Specific requirements for general purpose rod	ISO 16120-2:2011
63	Non-alloy steel rod for drawing and/or cold rolling – Part 3: Specific requirements for nominal and rimmed substitute low carbon steel rod	ISO 16120-3:2011
64	Non- alloy steel rod for drawing and/or cold rolling- Part 4: Specific requirements for wire rod for special applications	ISO 16120-4:2011



ANNEX 1E: LIST OF STAKEHOLDERS

ORGANISATION	CONTACT PERSON(s)	LOCATION
Zambia Chamber of Commerce & Industry (ZACCI)	-Ms. Prisca Chikwashi – CEO -Alfred Chitalu	Zambia
Zambia Association of Manufacturers	-Maybin Nsupila - CEO	Zambia
Zambia Bureau of Standards	-Margaret Lwenje Lungu – DED/TO -Fredrick Hamutunda -Prisca – Engineering & Chemistry Division	Zambia
COMESA Business Council	Susan Uwera - CEO	Zambia
Electrical Maintenance Lusaka Limited	George Nader	Zambia
Uganda Manufacturers Association	Ssebagala Kigozi	Uganda
Uganda National Bureau of Standards	Mr. Deus Mubangizi	Uganda
Comoros	Boinali Mohamed	Comoros
Swaziland Standards	Themba Simelane	Swaziland
Burundi Bureau of Standards & Quality Control (BBN)	Dieudonne Manirakiza	Burundi
Rwanda Bureau of Standards (RSB)	Anthanaise Mukeshiyaremye	Rwanda
Mauritius Standards Bureau	M.Y. Foondun – Ag Deputy Director	Mauritius
COMESA Secretariat	-Wilson Chizebka – COMstat -Tasara Muzorori – Trade & Customs Division -Zerezhgi K. Kidane – Trade & Customs Division -Officials – IPPSD Division	Zambia