2017-2018

ANNUAL REPORT

World Standards Day

14th October 2018

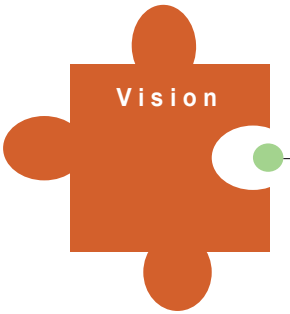
International Standards Day And

the 4th industrial revolution

IEC ISO ITU

Profile

‘To be the center of excellence in Standards, Metrology and Conformity Assessment services’



‘To promote and provide market relevant Standards, Metrology and internationally recognized Conformity Assessment services for industry, commerce, government and the society’

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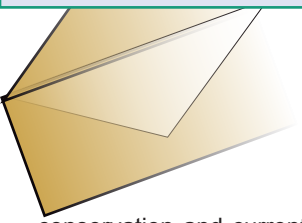
Message from Chief Engineer(Head)



Five Year Plan ended with a great success for the standardisation division. At the end of 11 FYP we have 243 national standards,10 committees and increased international linkages with ISO,IEC,ASTM and IEEE.Additionally,working relationship with numerous regulators and authorities within Bhutan has been established. As we start our 12 FYP,standardisation division has formulated the National Standardisation Strategy.The strategy will focus on standardisation in sectors which have bearing on our GDP,socio-economic development,environmental conservation and current market trends.The strategy also focuses on the GNHC domains,SDGs and standards identification for key indicators therein for our overall development.The strategy has been developed in close consultation with our national stakeholders and methodology adopted from the best international standardisation practises.

While media had been highlighting issues with regard to quality of services,road and infractures,government amenities,standardisation division had strived to develop standards to address those issues.It is also encouraging to note that agencies have come forward to BSB to develop standards to address issues such as internal house wiring,plumbing,fire safety standards,agri-food product standards and industrial manufactured products standards.It shows the growing concern and appreciation for the standards in the market and for consumer safety.

BSB with support from KATS,Korean Standards body and Ministry of Education,RGoB were able send three students and a teacher to the 13th International Standards Olympiad in South Korea.This was part of our endeavour to involve students in the standardisation field and to groom our future standardisers in the country.Standardisation division in an effort to bring the standards development works further to the desktop of our users and individuals alike ,have now started the online standardisation works.Any interested individual can comment and propose for standards through our website.

With active involvement and participation by our national stakeholders,9 South Asian Regional Standards Organisation(SARSO) standards have been finalised and shall be endorsed as national standards.These standards will give a level playing field and open up export avenues in the SAARC countries to our SMEs and manufacturers in the coming years.

We wish all our technical committee members,standards experts,stakeholders and individuals to participate in our national standards development works in the coming years.

Best Wishes !!!

Technical Committees

01 Civil Engineering Standards Technical Committee

02 Food and Agriculture Technical Committee

03 Electrical and Electronics Engineering Technical Committee

04 Basics and Management System Technical Committee

05 Pharmaceuticals and Traditional Medicines Technical Committee

06 Textiles Standards Technical Committee

07 Wood and Timber Products Technical Committee

08 Mechanical Engineering Technical Committee

09 Graphical Symbol Technical Committee

10 Sustainability and Environment Technical Committee

Year Highlights for 2017-2018

I.National Standards Conclave

The first ever national standards conclave was held at Hotel Namgay Heritage on 4th May 2018.All line ministries,agencies and private sector participated in the one day conclave. Honorable GNHC Secretary chaired the conclave.The conclave was hosted by BSB to bring together all the key stakeholders and to draw a common standardisation strategy for Bhutan.The conclave ended with a set of recommendations for BSB.

Participants of National Standards Conclave

II.Bhutanese students participate in 13th International Standards Olympiad

With financial assistance from RGoB and sponsorship from KATS,Korea,a teacher and three students from high school participated in the 13th International Standards Olympiad held in Korea on 9th August 2018. This was facilitated by standardisation division upon invitation to BSB. It provides platform to younger students to learn and put to real life practise of international standards.

Orientation program for participants

III. ASTM International workshop on Good Standardization Practice

Ms.Teresa from ASTM International visited BSB on 9th May, 2018. .She gave a one day workshop on Good Standardisation Practice.This was requested by BSB to bring our stakeholders on current international standardisation practises.As a developing country, numerous agencies and ministries are set up whilst the mandates and roles are overlapping due to oversight.To bring about clarity in national standardisation works,she highlighted the importance and roles of implementing agencies,regulatory roles and standards body.

ASTM expert with officials of BSB

IV.Standards commenting and voting goes online

To bring the standardisation works to your desktop,standards commenting and voting has now been made online through the BSB website.Experts,officials and individuals can now comment or vote on any standards.Users have to login and register before their comments can be registered and accepted.By default,all Technical committee members can comment and vote on any standards.

Online standards commenting and voting page

1175 FYP Stats

Our Hits and Misses

2017-18

National Standards Conclave

First ever national standards conclave was held on 4th May 2018.

2016-17

IEEE Linkage

Initial contact with the IEEE officials was made to establish linkage with BSB.It has progressed to signing standards adoption agreement phase with BSB.

2015-16

Standards Mapping Exercise

All standards within the country fully mapped and identified.Provides a glimpse of standards use across sectors.

2013-14

BSB enters into APT signing with RGoB

At the onset of 11 FYP,BSB signed Annual Performance Target signing with RGoB

Scores

Standards Development

●●●●●

Awareness & Promotion

●●●○○

Standards sales

●●○○○

International Linkages

●●●○○

HR Development

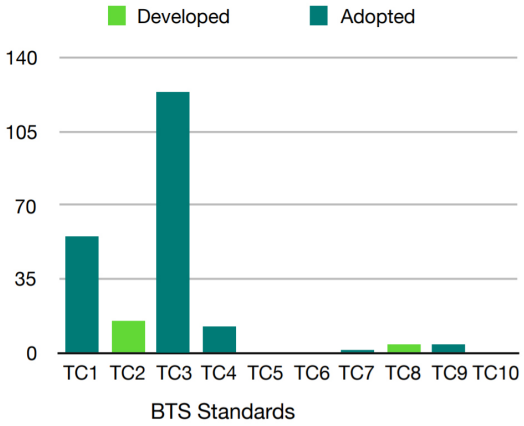
●●●○○

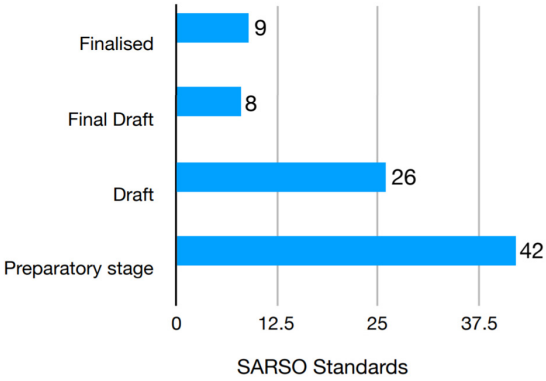
ICT in standardisation

●●○○○

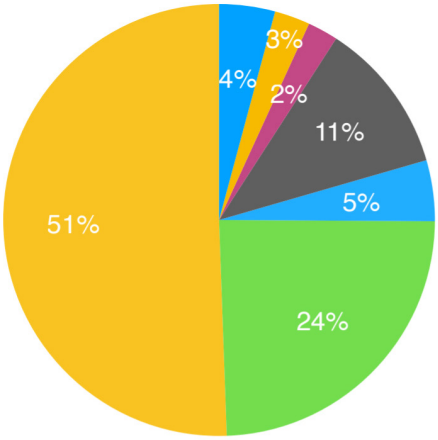
Bhutan still lacks dietary standards for food

Standard Development Works





Mechanical Engineering
Graphical symbols
Electrical & Electronics
Pharmaceuticals
Food & Agriculture
Wood products
Management systems
Textiles
Building Materails



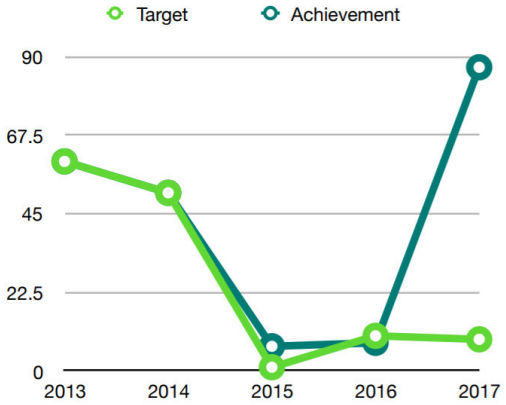
BTS standards Portfolio

	National Adoptions
ISO	18
IEC	127
BIS	29
SARSO	9

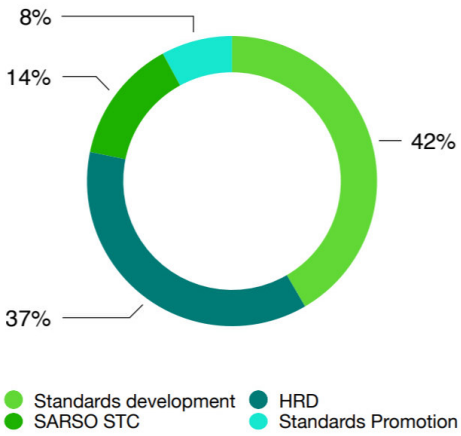
International Standards Adopted as National standards

18 %
Standards
Sales Conversion rate

Finance and Human Resources



11 FYP Standards Targets and achievements



Per Standards

- Development cost : Nu.11115
- Awareness cost : Nu.714
- Development of SARSO standard : Nu.16336

78 %

Overall Technical committee attendance

Total Meetings (incountry) : 31

Ex-country meetings : 3

Conference : 10

Trainings : 7

Global linkages : ISO ,IEC, ASTM, IEEE, BIS, BSTN,SARSO

Standards Awareness

Modes of standards enquiry


10 % Walk-in


54% Email


25 % Official Letter


11 % Phone call

SARSO : Regional Presence

BSBs Participation	Numbers/Officials	Attended Count	Curent Official
Governing Board	Director General/ BSB	6	Mr.Sonam Phuntsho
Technical Management Board	Head / Standardisation Division	5	Mr.Tshering Tashi
SARSO Technical Committee (STC)	5 STCs	18	Mr.Karma Tshetrim,Mr.T.B.chetri,Mr .Tashi Tenzin,Ms.Tashi Choden,Ms.Cheten Zangmo

ISO & IEC : International Presence

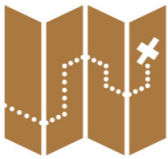
BSBs Participation		
ISO General Assmembly	41,40,39,38,37th	Attended as correspondent member
IEC General Meeting (Affiliate Member)	81,80,79,78,77th	TC-03 Twinning assistance with Swedish Standards
ASTM	TC-01 Member secretary attachment training at ASTM,USA	Online training courses provided free of charges to BSB
ISO Standardisation works	Voting and commenting in 5 P-membership TCs	TC-05 Basics & management twinning with Standards Australia

Modes of Awareness communication


BBS TV Talk-shows


Kuensel / Print media


Presentations on site


Annual reports/Brochures

Our Challenges

- Capital Fund
- Human Resources
- Technical Resources
- Work environment
- Experts availability

Challenges remain for standardisation division in ensuring the standards are used and implemented.While development of standards are going smoothly,it still faces issues.National issues like services,safety and consumer protection still needs numerous standards to be put in place.The policies,strategies and technical regulations are making references to national standards but uptake is still slow.

Water supply issues due to lack of standards.

Standards Use

While national standards are being developed,the use and implementation still lacks in certain sectors.The most used sectors are engineering and trade,as standards are a pre-requisite. Social sectors and governmental agencies have less or no standards currently.It is hoped that with greater awareness created amongst these sectors,more standards will be demanded and used in coming years.

Bhutan still lacks proper standards for sanitation facilities

Standards Officials in International Arena

Our standards experts and officials have participated in various international orums over the years.Participation to such forums exposes our participants to new international best practises.Also,they develop linkages with internanational standardisation bodies.

ISO TC/34/SC-17 Meeting

Ms.Tashi Choden attended the ISO/TC meeting on Food and Agricultural products in Netherlands.

" It was good experience for me to participate as observer in the international standards development works.I saw the international standardisation principles and methods put into practise"

ASTM Training

Mr.Karma Tsetrim was nominated to attend a month long training in ASTM,USA in 2016.

" As a professional with engineering background,it was a good oppurtunity to be at ATM International office,USA.The testing methods and standardisation principles were put to test and learnt valuable experiences during the training "

SARSO Meeting

Mr.Dechen Choiphel attended the 3rd STC on Chemicals & Chemical Products in Karachi,Pakistan in 2018.

" SARSO standards are crucial for promotion of trade and economy in the SAARC regions.SARSO standards can play a key role in bringing the nations closer through trade and increased interactions"

TECHNICAL

COMMITTEE

FOCUS ON TC 02 AND TC 03

Food and Agriculture Technical Committee

Food and Agriculture Technical Committee (TC 02) was constituted from 2012. Till date, 11 Standards on food and agriculture, 4 Standards in the area of livestock, 2 harmonized SAARC standards for food products and 1 harmonized SAARC code of practice for dairy industries.

Upon approval of the Technical Committee (TC 02) to carryout the development of National Standards, five subject specific sub-committees are formed (TC 02/ SC 01 Sub-Committee on Jam, Jellies and Marmalde, TC 02/ SC 02 Sub-Committee on Tea. TC 02/ SC 03 Sub-Committee on Honey., TC 02/ SC 04 Sub-Committee on Seeds, TC 02/SC 05 Sub-Committee on Fruit Juices)

All the relevant industries and stakeholders are involved in development of National Standards.

Electrical and Electronics Engineering Technical Committee

Electrical and Electronics Engineering Technical Committee (TC-03)

Electrical and Electronics Engineering Technical Committee TC -03 is also a Mirror Committee in IEC.Eversince,it has adopted numerous IEC standards as national standards.

To further widen the scope of standardisation works,BSB is in final stages of drawing up Standards Adoption Agreement with IEEE,USA.This will open up avenues for collaboration and IEEE standards being adopted at national standards.

The committee have adopted series of IEC standards looking at the market needs and based on request from the customer. The committee actively adopted 124 IEC standards as Bhutan Standard (BTS).

12TH FYP

WAY FORWARD

STANDARDIZATION DIVISION

1. National Standardization Strategy

The development of the national standardization strategy is based on the assessment of economic importance with priorities (GDP contribution and Export value) and non socio economic priorities (development plans/ social importance). Through consultation with the national stakeholders ,priority sectors and standards were identified. The NSS will provide a work plan for the BSB for 12 FYP and enable in addressing the current gaps in standardisation works in various sectors.The stakeholder need was obtained through national standards conclave which was held on 4th May, 2018.

2. ICT tools in standards development

For effective utilisation of ICT in standards development, standardisation division in collaboration with ICT section, BSB will develop tools to further bring various services online. Some of the works includes online standardsreference,ordering and buying, submit NWIP and for experts or individuals online standards meeting platform using Zoom software.

3. Balanced Standardisation works for GNH Domains

To ensure that all the GNH domain and indicators are supplemented with adequate standards to enhance its holistic development, the focus will be development of standards in those GNH domains that lack standards. For instance, domains like psychological wellbeing does not have any standards whereas domains like living standards had maximum number of standards. Further,some sectors do not have any standards and needs attention.Priority will be given to those sectors which need standards in the 12 FYP.

EDITORIAL TEAM

TSHERING TASHI
CHIEF ENGINEER
HEAD OF STANDARDIZATION DIVISION

PHURPA WANGDI
ASST. PROGRAM OFFICER
STANDARDIZATION DIVISION

TASHI TENZIN
ASST. RESEARCH OFFICER
STANDARDIZATION DIVISION

ANNEXURE

DIVISION ARTICLE

Current lift systems in Bhutan: Survey for public safety, maintenance and certification of lift systems

- Tshering Tashi, Phurpa Wangdi, Tek Bdr., and Tashi Tenzin

30.07.2018

The purpose of this study is to investigate conformity to ascertain the degree of safety requirements met by the lift systems in Bhutan. The study compared the lift systems between the buildings of Residential, Commercial and Government. The commercial building has complied better with safety requirements set by BTS 011-2003 and ISO/TS 22559-2:2010 standards. The safety of lift system can be met by conforming to standards which sets the requirement on operation, maintenance and certification on safety besides mandatory consideration to design and material quality.

Bhutan Building Rules, 2002 requires the lift installed in building having more than 5 storeys. ISO (International Organization for Standardization) standards on lift states different provisions for passenger and service lifts such as load capacities and speed. The standards also specifies the competent personnel requirements to provide information and instruction for usage and maintenance of lifts.

OTIS and Thyssen Krup lift brand are mostly used in Bhutan and the least used brand is KNG lift. 9.4% of lift brands are unknown. Commercial buildings has maximum percentage of lift installed; 59.4%. Less than 25% percentage of lift systems in Bhutan are using BIS standards (Indian Standards). Commercial buildings have highest maintenance contract for the lifts varying from one month to twelve months. More than 50% of government buildings do not have maintenance contract.

Where the lifts are to be used frequently, the information on carrying capacity, environment, and rush hour/time in day, safety and designs are necessary for lifts installation. However the lifts in Bhutan were mostly installed without considering the mentioned information.

This has led to higher number of lift breakdown in some buildings and it concerns the safety of the users. ISO 22559-1:2010 standard underlines the global essential safety requirements (GESRs) for lifts, which provisions the specification of components and functions and methods for minimizing the safety risks; load, travel distance, speed and number of landings (Health and Safety Authority, 2014). The safety requirement set in the ISO standards are not met comparatively as lifts owners were unaware of standards they have to comply and lack of Occupational Safety and Health Act on lifts in Bhutan.

The lifts in commercial buildings have better complied with four basic requirements when compared with 'Yes' and 'No' safety requirement ratio. However the lifts in residential and government buildings cannot be confirmed having poor safety comparing to commercial building because the sample representation from these two building is less as compared to commercial buildings.

The scheduled maintenance has to be carried out to address all the risk associated hazards by the competent personnel (Safety requirements for lifts, 2010) however 45% of lifts in government building were not maintained /repaired once and are non-usable. The Occupational Safety and Health Administration requires the lifts to be inspected in a 6 months frequency in general. However the frequency increases for lifts system providing heavy services (Darnley, 2016). The maintenance and repair instruction should contain a schedule of maintenance operations (ISO/TS 22559-1:2004). 75% Residential and 70.5% Commercial buildings in Bhutan have got Annual Maintenance Contract (AMC) to maintain the lifts with the inspection frequency from one month to 12 months. Government buildings have less percentage of AMC (28.5%) and has no technical person to maintain the lift. The study also found that there are no certified O & M personnel for the lifts in Bhutan.
The frequency of inspection should be higher in commercial buildings which is used by higher number of people (Health and Safety Executive, 2017). Commercial buildings have higher number of maintenance frequency (< 3 months) comparing to other buildings. This concerns the safety of users in buildings of residential and government buildings as maintenance frequency is low.

In-country technical personnel maintaining the lifts in some commercial and residential buildings were not certified by relevant authorities as required by the Global Essential Safety Requirements (2010). 75% of lifts were mostly not user friendly to visually impaired people in all three building besides not having provision of hand rails. A suitable battery operated alarm system shall be installed to indicate the problems when being trapped inside (Building Code of Bhutan, 2003) however 41% of the total lifts have nonoperational alarm. The BTS 011-2003 specifies the provision of fan and adequate ventilation with lifts having solid enclosed doors. The 25% of total lifts systems in Bhutan has poor ventilation inside the lift/car.

Although the survey did not inspect the fire resistance of lift materials (car), 47% of the lifts does not have fire extinguisher in place and no lift system in Bhutan has certification on display ensuring the safety and conformity to the standards. ISO/TS 22559-2 provisions to have patterned floor of car to enhance resistance to slip and some lifts are found not confirming to the requirement on pattered floor. The machine room of the lifts should properly enclosed, facilitated with lamp, should be fire proof (Building Code of Bhutan, 2003), however most building have exposed machine room and some machine rooms were used for un-intended purpose.

The lack of policy and liberal regulation regarding lift design and standards in Bhutan has resulted the building owners installing lift of their choice unlike European nations having policy and regulation about the lift design standards and directives which should be complied by the building owner (Statutory Instruments, 2017). Therefore, the survey suggest to have National Standards on Lifts meeting global essential safety requirements.

Recommendations

1. This study prescribes to have Bhutan Standards on safety requirements of lift in the technical regulation of lift
2. Conduct risk assessment of lift which includes risk analysis and evaluation.
3. Ensure certification of lift products before installation and routine monitoring of the life systems.

Report on the 13th International Standards Olympiad

We departed from Paro International Airport on August 7, 2018 and arrived our destination, Incheon Airport, South Korea on August 8, 2018 at around 6:30 am. We were then guided to the event area at Kumhoasiana HRD Center. On reaching there at 4 pm participants from the different countries(China,Ecuador, Peru, Malaysia, Japan, Singapore, Indonesia, Rwanda and Bhutan) started registration for the event.At5:20participants,teachersandobserversattendedthelectureonFuturewith Robotics then followed by dinner and exchange program within participants of the different countries.

August 9, 2018 the main event day started with the opening ceremony and then the participants from Middle School moved to Multipurpose Lecture Room and High School teams moved to Diamond Hall for the main task. High school teams were asked to develop a prototype of an autonomous vehicle that can detect any obstacles. Main task commenced from 10:00 am to 6:00 pm. In the mean time observers and the teachers who were not involved in the main task were taken for industrial tour to KIA Motors and a visit to Korean Folk Village. After the completion of the main task participants prepared for the cultural performance where we got to witness different cultural performances from various countries.

August 10, 2018 was the award and closing ceremony day where participants were awarded with different category of prizes. Grand prize being awarded to team Singapore. After the closing ceremony international participants were taken to Seoul where we were given a tour to National Palace Museum of Korea and to Seoul Namsan Tower. All the international participants departed for their respective country on August 11, 2018.

Such an opportunity to the students of our country is indeed a motivation to work even harder with determination and perseverance when they are being acknowledged and appreciated. However, it would be better in the future if BSB and MoE could provide more training or orientation as this kind of concept is totally new to students. It would be better for the relevant agencies to even plan of including Standardization into school curriculum so that students will be aware of its importance.

Report submitted By:

1. Tshering Samdrup (Chukha CentralSchool)
2. Tashi Yangso (YHS)
3. Kuenchab Pelma (Ugyen Academy)
4. Tshering Choden (Teacher, Sherubling CS)

List of BTS standards adopted from SARSO

1. BTS 124:2018 SARS/ISO 8491:1998 - Metallic materials -- Tube (in full section) - Bend test (adoption from ISO)
2. BTS 125: 2018 SARS/ISO 6892-1:2016 - Metallic materials -- Tensile testing - Part 1 Method of test at room temperature
3. BTS 126: 2018 SARS/ISO 6892-2:2011 - Metallic materials -- Tensile testing - Part 2 Method of test at elevated temperature
4. BTS 127: 2018 SARS/ISO 8492:2013 - Metallic materials -- Tube -- Flattening test
5. BTS 128: 2018 SARS/ISO 7438:2016 - Metallic materials -- Bend test
6. BTS 50: 2018 SARS 0006:2017 Biscuits — Specification
7. BTS 51: 2018 SARS 0007:2017 Refined sugar — Specification
8. BTS 52: 2018 SARS 0008:2017 Code of hygienic practice for dairy industry

List of Bhutan Standards (BTS)

1.BTS 34: 2017 Power Tillers- Basic Requirements (Part 1)
2.BTS: 35: 2018 Power Tiller Test Code
3.BTS: 36: 2018 Power Reaper - Basic Requirements (Part 1)
4.BTS 37: 2018-Walk Behind Power Reaper – Test Code (Part 2)
5.BTS 44: 2018 - Bhutan Standard for raw 'Brag-zhun' and processed 'Brag-zhun' paste
6.BTS 45: 2018 - Bhutan Healthcare Standard for Quality Assurance
7.BTS 53:2017 IEC 60095-1:2006 Lead- acid starter batteries-Part 1: General requirements and method of test
8.BTS 54:2017 IEC 60095-2:2009 Lead-acid starter batteries-Pat 2:Dimension of batteries and dimensions and marking of terminals
9.BTS 55:2017 IEC 60095-4:2008 Lead-acid batteries – Part 4: Dimension of batteries for heavy vehicles
10.BTS 56:2018 IEC 60601-1-2:2014 Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests
11.BTS 57:2018 IEC 60601-1-3:2008(Including amd.1) Medical electrical equipment - Part 1-3: General requirements for basic safety and essential performance - Collateral Standard: Radiation protection in diagnostic X-ray equipment
12.BTS 58:2018 IEC 60601-1-8:2006(Including amd. 1) Medical electrical equipment - Part 1-8: General requirements for basic safety and essential performance - Collateral Standard: General requirements, tests and guidance for alarm systems in medical electrical equipment and medical electrical systems
13.BTS 59:2018 IEC 60601-1-11:2015 Medical electrical equipment – Part 1-11: General requirements for basic safety and essential performance – Collateral Standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment
14.BTS 60:2018 IEC 60601-1-12:2014 Medical electrical equipment - Part 1-12: General requirements for basic safety and essential performance - Collateral Standard: Requirements for medical electrical equipment and medical electrical systems intended for use in the emergency medical services environment
15.BTS 61:2018 IEC 60601-2-1:2009(Including amd.1) Medical electrical equipment - Part 2-1: Particular requirements for the basic safety and essential performance of electron accelerators in the range 1 MeV to 50 MeV
16.BTS 62:2018 IEC 60601-2-2:2017 Medical electrical equipment - Part 2-2: Particular requirements for the basic safety and essential performance of high frequency surgical equipment and high frequency surgical accessories
17.BTS 63:2018 IEC 60601-2-3:2012(Including amd.1) Medical electrical equipment - Part 2-3: Particular requirements for the basic safety and essential performance of short-wave therapy equipment
18.BTS 64:2018 IEC 60601-2-4:2010 Medical electrical equipment - Part 2-4: Particular requirements for the basic safety and essential performance of cardiac defibrillators
19.BTS 65: 2018 IEC 60601-2-5:2009 Medical electrical equipment - Part 2-5: Particular requirements for the basic safety and essential performance of ultrasonic physiotherapy equipment
20.BTS 66:2018 IEC 60601-2-6:2012(Including amd.1) Medical electrical equipment - Part 2-6: Particular requirements for the basic safety and essential performance of microwave therapy equipment
21.BTS 67:2018 IEC 60601-2-8:2010(Including amd.1) Medical electrical equipment - Part 2-8: Particular requirements for the basic safety and essential performance of therapeutic X-ray equipment operating in the range 10 kV to 1 MV
22.BTS 68:2018 IEC 60601-2-10:2012(including amd.1) Medical electrical equipment - Part 2-10: Particular

24.BTS 70:2018 IEC 60601-2-16:2012 Medical electrical equipment - Part 2-16: Particular requirements for basic safety and essential performance of haemodialysis, haemodiafiltration and haemofiltration equipment
25.BTS 71:2018 IEC 60601-2-17:2013 Medical electrical equipment - Part 2-17: Particular requirements for the basic safety and essential performance of automatically-controlled brachytherapy afterloading equipment
26.BTS 72:2018 IEC 60601-2-18:2009 Medical electrical equipment - Part 2-18: Particular requirements for the basic safety and essential performance of endoscopic equipment
27.BTS 73:2018 IEC 60601-2-19:2009(Including amd.1) Medical electrical equipment - Part 2-19: Particular requirements for the basic safety and essential performance of infant incubators
28.BTS 74:2018 IEC 60601-2-20:2009(Including amd.1) Medical electrical equipment - Part 2-20: Particular requirements for the basic safety and essential performance of infant transport incubators
29.BTS 75:2018 IEC 60601-2-21:2009(including amd.1) Medical electrical equipment - Part 2-21: Particular requirements for the basic safety and essential performance of infant radiant warmer
30.BTS 76:2018 IEC 60601-2-22:2007 (including amd.1)Medical electrical equipment - Part 2-22: Particular requirements for basic safety and essential performance of surgical, cosmetic, therapeutic and diagnostic laser equipment
31.BTS 77:2018 IEC 60601-2-23:2011 Medical electrical equipment - Part 2-23: Particular requirements for the basic safety and essential performance of transcutaneous partial pressure monitoring equipment
32.BTS 78:2018 IEC 60601-2-24:2012 Medical electrical equipment - Part 2-24: Particular requirements for the basic safety and essential performance of infusion pumps and controllers
33.BTS 79:2018 IEC 60601-2-25:2011 Medical electrical equipment - Part 2-25: Particular requirements for the basic safety and essential performance of electrocardiographs
34.BTS 80:2018 IEC 60601-2-26:2012 Medical electrical equipment - Part 2-26: Particular requirements for the basic safety and essential performance of electroencephalographs
35.BTS 81:2018 IEC 60601-2-29:2008 Medical electrical equipment - Part 2-29: Particular requirements for the basic safety and essential performance of radiotherapy simulators
36.BTS 82:2018 IEC 60601-2-31:2008 (including amd.1) Medical electrical equipment - Part 2-31: Particular requirements for the basic safety and essential performance of external cardiac pacemakers with internal power source
37.BTS 83:2018 IEC 60601-2-33:2010(including amd.1&2) Medical electrical equipment - Part 2-33: Particular requirements for the basic safety and essential performance of magnetic resonance equipment for medical diagnosis
38.BTS 84:2018 IEC 60601-2-34:2011 Medical electrical equipment - Part 2-34: Particular requirements for the basic safety and essential performance of invasive blood pressure monitoring equipment
39.BTS 85:2018 IEC 60601-2-36:2014 Medical electrical equipment - Part 2-36: Particular requirements for the basic safety and essential performance of equipment for extracorporeally induced lithotripsy
40.BTS 86:2018 IEC 60601-2-37:2007(including amd.1) Medical electrical equipment - Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment
41.BTS 87:2018 IEC 60601-2-39:2007 Medical electrical equipment - Part 2-39: Particular requirements for basic safety and essential performance of peritoneal dialysis equipment
42.BTS 88:2018 IEC 60601-2-40:2016 Medical electrical equipment - Part 2-40: Particular requirements for the basic safety and essential performance of electro myographs and evoked response equipment
43.BTS 89:2018 IEC 60601-2-41:2009(including amd.1) Medical electrical equipment - Part 2-41: Particular requirements for the basic safety and essential performance of surgical luminaires and luminaires for diagnosis
44.BTS 90:2018 IEC 60601-2-43:2010(including amd.1) Medical electrical equipment - Part 2-43: Particular requirements for the basic safety and essential performance of X-ray equipment for interventional procedures
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49.BTS 95:2018 IEC 60601-2-49:2011 Medical electrical equipment - Part 2-49: Particular requirements for the basic safety and essential performance of multifunction patient monitoring equipment
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