



# POWERONIC

— TEST & RESEARCH CENTRE —

TRANSFERRING...

```
63: 20 7B F6    jsr InitActor
66: BD 53 C1    lda XPosTable1,x
69: 9D 80 04    sta ObjectPosX,x
6C: 9D 58 C1    lda YPosTable1,x
6F: 9D 00 06    sta ObjectPosY,x
72: BD 5D C1    lda SpriteNumTable1,x
75: 9D 00 04    sta ObjectSpriteNum,x
78: A9 00       lda #$00
7A: 9D 20 04    sta ObjectFlags,x
7D: CA         dex
7E: D0 E3      bne SetNObjects

C6: A9 78       lda #$78
C6: 85 0D       sta $0D
C8: A9 70       lda #$70
CA: 85 0C       sta $0C
```

# PROFILE



**Poweronic Test & Research Center** is a most valuable & time-tested partner for leading manufacturers & brands across the globe. Laboratory is an independent and accredited organization which serves quality testing & development of various Electro - Technical products of manufacturing Industries. **Laboratory Aims to Provide Prompt, Accurate & Reliable Testing, Inspection & Consultancy** services at affordable costs and to motivate and educate various stake holders including manufacturers and users for selling and promoting their products at a level of high-quality enhancement as per National & International standards.

**Laboratory is an IS/IEC/ISO: 17025 Accredited by NABL (National Accreditation Board of Laboratories) a Quality council of India and BIS Recognized Laboratory.** Laboratory has also a member of Association of Indian Laboratories and Metrology society of India.

## Our Mission, Vision & Values

**PTRC** is committed to maintain accurate, reliable & consistent results for testing, Calibration & training Services To achieve the top most level among the valuable groups of testing & calibration laboratories through our high-quality performance & by continuously development of new trends & ways for testing of product in short duration of time as per different research-based standards Empower employees with tools, training and supportive company culture to facilitate their personal and professional development.

## Our Core Values

- **Accountability & Commitment**
- **Corporate Citizenship**
- **Scientific Expertise**
- **Diversity**
- **Impartiality & Confidently**
- **Honesty & Integrity**
- **Teamwork**

**POWERONIC**  
—TEST & RESEARCH CENTRE—



# CERTIFICATIONS & APPROVALS



**NABL**

**BIS**

**AIOL**



**ISO 9001**

**ISO 14001**

**ISO 45001**



## OUR CLIENTS:-



# TESTING FACILITIES AS PER NATIONAL & INTERNATIONAL STANDARDS



## CABLES & WIRES

<b>BS 7846</b>	THERMOSETTING INSULATED , ARMORED FIRE RESISTANT CABLES HAVING LOW EMISSION OF SMOKE AND CORROSIVE GASES.
<b>BS 6724</b>	ELECTRIC CABLES.THERMOSETTING INSULATED , ARMOURD CABLES OF RATED VOLTAGES OF 600 / 1000 V AND 1900 /3300 V FOR FIXED INSTALLATIONS , HAVING LOW EMISSION OF SMOKE AND CORROSIVE GASES WHEN AFFECTED BY FIRE.
<b>IS 17505 (Part-1)</b>	THERMOSETTING INSULATED FIRE SURVIVAL CABLES FOR FIXED INSTALLATION HAVING LOW EMISSION OF SMOKE AND CORROSIVE GASES WHEN AFFECTED BY FIRE FOR WORKING VOLTAGES UPTO AND INCLUDING 1100 V AC AND DC.
	<b>OTHERS</b>
<b>IS 694</b>	PVC INSULATED CABLES FOR RATED VOLATGES UP TO AND INCLUDING 1100 VOLT .
<b>IS 5950</b>	SHOT FIRING CABLES ( FOR USE OTHER THAN IN SHAFTS ).
	<b>ELASTOMERIC ENSULATED CABLE</b>
<b>IS 14494</b>	ELASTOMER INSULATED FLEXIBLE CABLES FOR USE IN MINES.
<b>IS 9968</b>	ELASTOMERIC INSULATED CABLES FOR WORKING VOLATGES UP TO AND INCLUDING 1100 V .
	<b>AERIAL BUNDLED CONDUCTORS / CABLES</b>
<b>NFC 33-209</b>	BUNDLED ASSEMBLED CORES FOR OVERHEAD SYSTEMS OF RATED VOLTAGES 0.6/1 KV
<b>IS 14255</b>	AERIAL BUNCHED CABLES
	<b>POWER CABLES</b>
<b>IEC 60502-1</b>	POWER CABLES WITH EXTRUDED INSULATION AND THEIR ACCESSORIES FOR RATED VOLATGES FROM 1 KV TO 3 KV .
<b>IS 7098-1</b>	CROSSLINKED POLYETHENE INSULATED SHEATHED CABLES FOR WORKING VOLTAGES UP TO AND INCLUDING 1100 V .



# TESTING FACILITIES AS PER NATIONAL & INTERNATIONAL STANDARDS



## CABLES & WIRES

	<b>WELDING CABLES</b>
<b>IS 9857</b>	WELDING CABLES
	<b>HFFR CABLES</b>
<b>IS 17048</b>	HALOGEN FREE – FLAME RETARDANT ( HFFR) CABLES FOR WORKING VOLTAGES UP TO AND INCLUDING 1100 VOLTS
	<b>SMOKE DENSITY RATING TEST</b>
<b>IEC 61034-2</b>	SMOKE DENSITY RATING
	<b>LIFE CYCLE / THERMAL ENDURANCE TEST</b>
<b>IEC 60216-1</b>	THERMAL ENDURANCE TEST
<b>IEC 60216-2</b>	THERMAL ENDURANCE TEST
<b>IS 8504-2</b>	THERMAL ENDURANCE TEST
<b>IS 8504-1</b>	THERMAL ENDURANCE TEST
	<b>RAILWAY ROLLING STOCK CABLES</b>
<b>BS EN 50264-3-1</b>	RESISTANCE AGAINST ACID AND ALKALI SOLUTION
<b>BS 50305</b>	RAILWAY APPLICATIONS . RAILWAY ROLLING STOCK CABLES HAVING SPECIAL FIRE PERFORMANCE . TEST METHODS
	<b>AUTOMOTIVE CABLES</b>
<b>ISO 6722-1</b>	ROAD VEHICLES 60 V AND 600 V SINGLE CORE CABLES
<b>IS 2465</b>	CABLES FOR MOTOR VEHICLES
	<b>EV CHARGING CABLES</b>
<b>IEC 62893</b>	CHARGING CABLES FOR ELECTRIC VEHICLES FOR RATED VOLTAGES UP TO AND INCLUDING 0,6/1 KV – PART 3
<b>IEC 62893-4-1</b>	CHARGING CABLES FOR ELECTRIC VEHICLES FOR RATED VOLTAGES UP TO AND INCLUDING 0,6/1 KV – PART 4-1





# TESTING FACILITIES AS PER NATIONAL & INTERNATIONAL STANDARDS



## CABLES & WIRES

<b>BS EN 50620</b>	ELECTRIC CABLES : CHARGING CABLES FOR ELECTRIC CABLES
<b>IEC 62893-1</b>	CHARGING CABLES FOR ELECTRIC VEHICLES FOR RATED VOLTAGES UP TO AND INCLUDING 0,6/1 KV – PART 1
<b>IEC62893-2</b>	CHARGING CABLES FOR ELECTRIC VEHICLES FOR RATED VOLTAGES UP TO AND INCLUDING 0,6/1 KV – PART 2
	<b>OXYGEN INDEX &amp; TEMPERATURE INDEX</b>
<b>ISO 4589-2</b>	OXYGEN INDEX TEST & TEMPERATURE INDEX
<b>ASTM D 2863</b>	OXYGEN INDEX TEST & TEMPERATURE INDEX
<b>ISO 4589-3</b>	OXYGEN INDEX TEST & TEMPERATURE INDEX
	<b>FLAMMABILITY TEST</b>
<b>IEC 60331-1-2</b>	FLAMMABILITY TEST
	<b>RESISTANCE TO FIRE , WATER &amp; MECHANICAL SHOCK</b>
<b>BS 6387</b>	RESISTANCE TO FIRE WITH MECHANICAL SHOCK WITH WATER
<b>IEC 60331-11</b>	RESISTANCE TO FIRE ALONE
<b>IEC 60331-21</b>	RESISTANCE TO FIRE ALONE
<b>IEC 60331-23</b>	RESISTANCE TO FIRE ALONE
<b>IEC 60331-25</b>	RESISTANCE TO FIRE ALONE
<b>IEC 60331-2</b>	RESISTANCE TO FIRE WITH MECHANICAL SHOCK
<b>BS 8434-2</b>	RESISTANCE TO FIRE WITH MECHANICAL SHOCK WITH WATER
<b>BS EN 50200</b>	RESISTANCE TO FIRE WITH MECHANICAL SHOCK WITH WATER
<b>BS 8491</b>	RESISTANCE TO FIRE WITH MECHANICAL SHOCK WITH WATER
<b>IEC 60331-1</b>	TESTS FOR ELECTRIC CABLES UNDER FIRE CONDITIONS – CIRCUIT INTEGRITY – PART 1 : TEST METHOD FOR FIRE WITH SHOCK AT A TEMPERATURE OF AT LEAST 830°C FOR CABLES OF RATED VOLTAGE UP TO AND INCLUDING 0,6/1.0 KV AND WITH AN OVERALL DIAMETER EXCEEDING 20 MM.



# TESTING FACILITIES AS PER NATIONAL & INTERNATIONAL STANDARDS



## CABLES & WIRES

<b>IEC 60331-3</b>	TESTS FOR ELECTRIC CABLES UNDER FIRE CONDITIONS – CIRCUIT INTEGRITY – PART 1 : TEST METHOD FOR FIRE WITH SHOCK AT A TEMPERATURE OF AT LEAST 830°C FOR CABLES OF RATED VOLTAGE UP TO AND INCLUDING 0,6/1.0 KV TESTED IN A METAL ENCLOSURE
	<b>FLAME PROPAGATION TEST</b>
<b>IEC 60332-3-21</b>	TESTS ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS – PART 3-22 : TEST FOR VERTICAL FLAME SPREAD OF VERTICALLY – MOUNTED BUNCHED WIRES FOR CABLES – CATEGORY A F/R
<b>IEC 60332-3-22</b>	TESTS ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS – PART 3-22 : TEST FOR VERTICAL FLAME SPREAD OF VERTICALLY – MOUNTED BUNCHED WIRES FOR CABLES – CATEGORY A
<b>IEC 60332-3-23</b>	TESTS ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS – PART 3-23 : TEST FOR VERTICAL FLAME SPREAD OF VERTICALLY – MOUNTED BUNCHED WIRES FOR CABLES – CATEGORY B
<b>IEC 60332-3-24</b>	TESTS ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS – PART 3-23 : TEST FOR VERTICAL FLAME SPREAD OF VERTICALLY – MOUNTED BUNCHED WIRES FOR CABLES – CATEGORY C
<b>IEC 60332-3-25</b>	TESTS ON ELECTRIC AND OPTICAL FIBRE CABLES UNDER FIRE CONDITIONS – PART 3-23 : TEST FOR VERTICAL FLAME SPREAD OF VERTICALLY – MOUNTED BUNCHED WIRES FOR CABLES – CATEGORY D
	<b>LOW VOLTAGE ENERGY CABLES</b>
<b>BS EN 50525-1</b>	ELECTRIC CABLES. LOW VOLTAGE ENERGY CABLES OF RATED VOLATGES UP TO AND INCLUDING 450/750 V (UO/U) GENERAL REQUIREMENTS
<b>BS EN 50525-2-21</b>	ELECTRIC CABLES. LOW VOLTAGE ENERGY CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V (UO/U) CABLES FOR GENERAL APPLICATIONS FLEXIBLE CABLES WITH CROSS LINKED ELASTOMERIC INSULATION
<b>BS EN 50525-3-41</b>	ELECTRIC CABLES . LOW VOLTAGE ENERGY CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V (UO/U) CABLES WITH SPECIAL FIRE PERFORMANCE . SINGLE CORE NON-SHEATHED CABLES WITH HALOGEN FREE CROSSLINKED INSULATION , AND LOW EMISSION OF SMOKE .
<b>IEC 60227-2</b>	POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V – PART 2 TEST METHODS



# TESTING FACILITIES AS PER NATIONAL & INTERNATIONAL STANDARDS



## CABLES & WIRES

<b>IEC 60227-1</b>	POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V – PART 1 GENERAL REQUIREMENTS
<b>IEC 60227-3</b>	POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V – PART 3 NON SHEATHED CABLES FOR FIXED WIRING
<b>IEC 60227-4</b>	POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V – PART 4 SHEATHED CABLES FOR FIXED WIRING
<b>IEC 60227-5</b>	POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V – PART 5 FLEXIBLE CABLES ( CORDS )
<b>IEC 60227-6</b>	POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V – PART 6 LIFT CABLES AND CABLES FOR FLEXIBLE CONNECTIONS
<b>IEC 60227-7</b>	POLYVINYL CHLORIDE INSULATED CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V – PART 7 FLEXIBLE CABLES SCREENED AND UNSCREENED WITH TWO OR MORE CONDUCTORS
<b>BS EN 50525 -2-11</b>	ELECTRIC CABLES : LOW VOLTAGE ENERGY CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 (UO/U) CABLES FOR GENERAL APPLICATIONS . FLEXIBLE CABLES WITH THERMOPLASTIC PVC INSULATION
<b>BS EN 50363-3</b>	PVC SHEATHED ELECTRIC CABLE AND WIRE
<b>BS EN 50363-4-1</b>	PVC SHEATHED ELECTRIC CABLE AND WIRE
<b>BS EN 50395</b>	HARMONIZED LOW VOLTAGE ENERGY CABLES OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V .
<b>BS EN 50396</b>	LOW VOLTAGE ENERGY CABLES
<b>IEC 62394</b>	ELECTRIC CABLES FOR RATED VOLTAGES UPTO AND INCLUDING 450/750 V.
	<b>SOLAR CABLES</b>
<b>IEC 62930</b>	ELECTRIC CABLES FOR PHOTOVOLTAIC SYSTEMS
<b>BS EN 50618</b>	ELECTRIC CABLES FOR PHOTOVOLTAIC SYSTEMS
<b>IS 17293</b>	ELECTRICAL CABLES FOR PHOTOVOLTAIC SYSTEMS FOR RATED VOLTAGE 1500 V d.c.





# TESTING FACILITIES AS PER NATIONAL & INTERNATIONAL STANDARDS



## WIRING ASSESSORIES LED, LUMARIES & ASSESSORIES

	CONDUCTORS & CONDUCTING MATERIALS
IEC/BS EN 60228	CONDUCTORS FOR INSULATED CABLES
IS 398 (PART-1)	ALUMINIUM STRANDED CONDUCTORS FOR OVERHEAD TRANSMISSION PRUPOSES .
IS 398 (PART-2)	ALUMINIUM STRANDED CONDUCTORS , GALVANISED STEEL REINFORCED FOR OVERHEAD TRANSMISSION PURPOSES
IS 398 (PART-3)	ALUMINIUM CONDUCTORS FOR OVERHEAD TRANSMISSION PURPOSES PART 3 ALUMINIUM CONDUCTORS, ALUMINIZED - STEEL REINFORCED
IS 398 (PART-4)	ALUMINIUM CONDUCTORS FOR OVERHEAD TRANSMISSION PURPOSES PART 4 ALUMINIUM ALLOY STRANDED CONDUCTORS (ALUMINIUM-MAGNESIUM-SILICON TYPE)
BS EN 50397-1	COVERED CONDUCTORS FOR OVERHEAD LINES AND THE RELATED ACCESSORIES FOR RATED VOLTAGES ABOVE 1 KV AC AND NOT EXCEEDING 36 KV – PART 1 : COVERED CONDUCTORS
	DOMESTIC ELECTRICAL APPLIANCES
IS 302-2-6	COOKING RANGES , HOBS & SIMILAR APPLIANCES
IS 4250	DOMESTIC ELECTRIC FOOD MIXERS ( LIQUIDIZERS & GRINDERS )
IS 374	CEILING TYPE FANS & REGULATORS
IS 302-22-201	ELECTRIC IMMERSION WATER HEATER
IS 302-22-35	ELECTRIC INSTANTAENOUS WATER HEATER
IS 8978	ELECTRIC INSTANTAENOUS WATER HEATER
IS 368	ELECTRIC IMMERSION WATER HEATER
IS 366	ELECTRIC IRON
IS 302-2-3	ELECTRIC IRON
IS 302-2-14	ELECTRIC KITCHEDN MACHINES – BLENDERS
IS 302-2-30	ROOM HEATER
IS 555	TABLE TYPE FANS & REGULATORS
IS 302-2-80	FANS
IS 4159	HEATING ELEMENTS



# TESTING FACILITIES AS PER NATIONAL & INTERNATIONAL STANDARDS



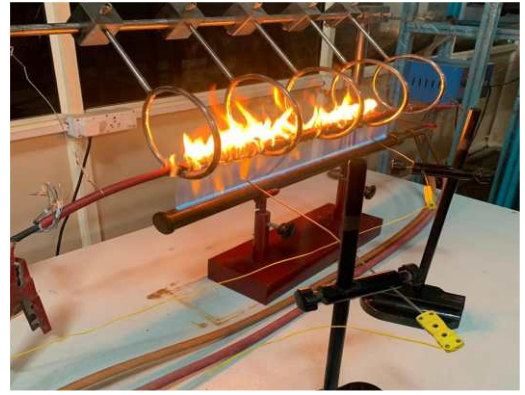
## HOME APPLIANCES

	<b>CONDUITS</b>
<b>IS 9537-2</b>	RIGID STEEL CONDUITS
<b>IS 9537-3</b>	RIGID PLAIN CONDUITS OF INSULATING MATERIALS
	<b>PLUGS &amp; SOCKETS</b>
<b>IS 1293</b>	PLUGS & SOCKETS
<b>IS 15787</b>	SWITCH-SOCKET-OUTLETS ( NON-INTERLOCK – OUTLETS )
<b>IS 3854</b>	SWITCHES FOR DOMESTIC AND SIMILAR PURPOSES
	<b>FAN REGULATOR</b>
<b>IS 11037</b>	ELECTRIC TYPE FAN REGULATORS
	<b>LAMPS &amp; LUMINARIES</b>
<b>IS 10322 (PART-5)/SECTION-01</b>	GENERAL PURPOSE LUMINARIES
<b>IS 16102-1</b>	SELF BALLASTED LED LAMPS FOR GENERAL LIGHTING LAMPS
<b>IEC 60589-2-1</b>	FIXED GENERAL PURPOSE LUMINARIES
	<b>ACCESSORIES – CONTROLGEAR</b>
<b>IS 15885 (PART-5)/SECTION 13</b>	D.C. SUPPLIED ELECTRONIC CONTROL GEAR FOR LED MODULES
<b>IEC 61347-2-13</b>	D.C. OR A.C. SUPPLIED ELECTRONIC CONTROL GEAR FOR LED MODULES
<b>EN 62560</b>	D.C. OR A.C. SUPPLIED ELECTRONIC CONTROLGEAR FOR LED MODULES
	<b>ENVIRONMENT TEST FACILITY</b>
<b>ASTM G 154</b>	UV RESISTANCE TEST
<b>POWERONIC STANDARD</b>	ANTI RODENT & ANTI TERMITE TEST
<b>NES 713</b>	TOXICITY TEST
<b>IS 9000</b>	DRY HEAT & COLD TEST
<b>IS 9000, QM 333</b>	DUST TEST
<b>IS/IEC 60529, IEC 62262</b>	IP TEST



## FIRE- SURVIVAL TEST

These cables are tested in accordance with BS 7846, IS 7098(P-1), IEC 69331 and BS 6387 for required temperatures and duration - depending upon the application of cable and site conditions.



## UV RESISTANCE TEST

The test is carried on cable samples, which become aged in UV light (xenon arc or carbon arc lamp) for 720 hours. On samples of sheath material elongation at break and tensile strength is measured. The values may not drop below 80% of unaged samples.

## NETWORK ANALYSOR FACILITY

A network analyzer is an instrument that measures the network parameters of electrical networks. Today, network analyzers commonly measure –s-parameters because reflection and transmission of electrical networks are easy to measure at high frequencies, but there are other network parameter sets such as y-parameters, z-parameters, and h-parameters. Network analyzers are often used to characterize two-port networks such as amplifiers and filters, but they can be used on networks with an arbitrary number of ports.





## THERMAL AGEING/ ENDURANCE FACILITY



Thermal aging is used to test the ability of a product to withstand elevated temperatures for an extended period of time. This test measures the change in LLCR and mating / un-mating force both before and after the parts have been thermally exposed in a thermal chamber.

### AN NABL ACCREDITED LABORATORY

Poweronic Laboratory is equipped with various testing facilities such as NES Toxicity Test Apparatus, Anti-Rodent & terminal Cage, Ozone Resistance Apparatus, Black Carbon Content, Conditioning Chamber up to -40°C

### Environmental Test Facilities :

**Damp Heat Chamber, Dust Chamber & Heat Cycle Test Apparatus etc.**



#### **POWERONIC TEST & RESEARCH CENTRE PVT.LTD.**

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