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LOS ANGELES ABRASION TESTING MACHINE - WITH PRESETTABLE DIGITAL COUNTER

Compliance Standards:

IS 2386 - IV, ASTM C135, IS 10070-1982

Applications:

This machine is used to find the percentage wear due to relative rubbing action between the aggregates and steel balls used as abrasive charge. The oven-dried aggregates are weighed and rotated along with abrasive charge in the machine for the 500 or 1000 revolutions and percentage of wear so found out is reported Los Angeles abrasion value.

1. The machine consist of a hollow steel cylinder, closed at both ends, having inside diameter of 700 mm and inside length of 500 mm
2. The cylinder will be mounted on a sturdy shaft with ball bearings on support, about which it rotates on a horizontal axis.
3. An opening will be provided in the cylinder for pouring the test sample.
4. A removable cover of the opening with a sturdy pad shall be provided with bolts and nuts to close it dust tight.
5. A removable steel shelf projecting radially 8.8 cm into the cylinder and extending to the full length of it, will be mounted on the interior surface of the cylinder rigidly, parallel to the axis.
6. **The shelf will be fixed at a distance of 125 cm from the opening, measured along the circumference in the direction of rotation.**
7. **The drum will rotate at a speed of 30-33 RPM by an electric motor through a heavy duty reduction gear.**
8. It will be fitted with Pre-settable Electronic revolution counter and push button starter.
9. It will be supplied complete with a Galvanized Tray for collection of material.
10. **It will be supplied with abrasive charge of 12 nos. cast iron or hardened steel spheres, each of approximately 48 mm diameter and 390 to 445 gm in weight.**
11. Weight : 375 Kg approx

Click here for working video :https://www.youtube.com/watch?v=YqthILRTkAs

Technical Specification

•Overall Dimensions	:	970 X 1060 X 1020(L X W X D) mm
•Weight (Approx.)	:	375 Kgs Approx.

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ABRASION RESISTANCE TESTING MACHINE FOR GEOTEXTILE - ASTM D4886

Compliance Standards:

ISO 13427, ASTM D4886, IS 14714, Annex B of IS 16653

Applications:

Geotextile Abrasion Resistance Tester is used to determine the resistance of geotextile or geotextile-related products to abrasion using an abrasion tester by Sand Paper/Sliding Block Method. It is only applicable to geotextile, not to geomembranes, geogrids. A predetermining electro-magnetic counter allows the sample to be abraded to the desired number of strokes.

Technical Specification

•Upper/Lower Plate size	:	50 × 200 mm
•Stroke length	:	25 ± 1 mm
•Speed of reciprocating plate	:	90 Cycles/Minute
•Weight (Including the upper plate & dead weight)	:	6 ± 0.01 kg
•Counter range	:	1~9999, 1~99990, 1~999900 - Settable
•Power Supply	:	230 Volts, 50 Hz, Single Phase, AC Supply

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ABRASION TESTING MACHINE FOR GLAZED TILES-(SINGLE SAMPLE)-(BIS 13630-11, EN ISO 10545-7)

Compliance with following International Standards:

IS : 13630 (Part 11), ISO : 10545 (Part 7) - Matching the standard with deviations

Operating Principle:

The ability of glazed tiles to resist surface abrasion encountered in everyday use is determined by abrading the glazed surface either with a wet abrasive media consisting of steel balls of 1 to 5 mm diameter, aluminum oxide abrasive powder, and distilled water; or with a dry abrasive media consisting of porcelain cylinders and Aluminum Oxide Abrasive Powder.

The test is conducted by holding a number of test specimens on a flat horizontal disc. The disc is rotated at a speed of 300 rpm with the axis of rotation 22.5 mm out. This causes the abrasive load placed above the test specimen to rub over the surface of test specimen in a circle of 45 cm diameter. The abrasive load is kept in place over the test surface inside a rubber lined cylindrical metallic ring. The ring also keeps the test specimen firmly pressed against the metallic disc.

Construction Details:

1. The Resistance to surface Abrasion tester for glazed tiles consists of a fabricated horizontal metal disc, a motorized arrangement to rotate the disc, a pre set type electronic counter, specimen holding ring for holding test specimens on the surface of the disc.
2. The metallic disc is fabricated from mild steel plate. It can be rotated at a vertical axis displaced by 22.5 from the center of the disc such that any point on its surface traverses through a circle of 45 mm diameter once for each revolution of the disc. A counter weight is fixed on the lower face of the disc to balance the effect of vibrations set up due to its eccentricity.
3. The disc is rotated at a speed of 300 rpm with the help of a motor and V belt and pulley arrangement. A pre set type electronic counter with key lock reset and memory backup is provided to record the total number of rotations of the disc and also to switch off the motor after the desired number of rotations.
4. The test specimens are held against the upper surface of the disc with the help of rubber lined circular rings and holding plates with cover which serve both to hold the test specimens and as containers for abrasive loads placed over them. Eight such holders are provided to hold up to eight test specimens over the disc at one time.
5. The above components are mounted over a rigid metallic base. The equipment is finished in attractive powder coating and bright chrome / Zinc plating to give it a corrosion resistant finish.
6. Supplied with steel balls of 1mm - 5mm diameter and silicon carbide powder only. Other grinding media at extra cost

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(A) For Wet Abrasion Load

1. Steel Balls of 5, 3, 2 & 1 mm diameter
2. White fused alumina oxide of 80 grit

Optional at extra cost

(B) For dry abrasive Load

1. Porcelain cylinders (set of 50 cylinders of 20 mm length X 20 mm dia and 50 cylinders of 15 mm length X 15 mm dia.
2. Silicon Carbide powder of 30 grit
3. Float Glass of size 100 X 100 X 10 mm (set of 100 nos.)

Technical Specification

•Diameter of rotating disc	: 580 mm
•Eccentricity of axis of rotation of the disc	: 22.5 mm
•Speed of rotation of disc	: 300 ± 10 rpm
•Max. no of test specimens tested at a time	: 1 number
•Inside diameter of specimen holding ring	: 83 mm
•Distance of centre of test area from center of disc	: 195 mm
•Electric Motor power	: 1/4 HP Single-phase, 230 Volts, 50 Hz, AC supply
•Digital counter	: 4 digits pre-set type electronic counter with memory back up and key-lock reset

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ABRASION TESTING MACHINE FOR GLAZED TILES-(4 SAMPLES)-(BIS 13630-11, EN ISO 10545-7)

Compliance with following International Standards

IS : 13630 (Part 11), ISO : 10545 (Part 7) - Matching the standard with deviations

Operating Principle

The ability of glazed tiles to resist surface abrasion encountered in everyday use is determined by abrading the glazed surface either with a wet abrasive media consisting of steel balls of 1 to 5 mm diameter, aluminum oxide abrasive powder, and distilled water; or with a dry abrasive media consisting of porcelain cylinders and Aluminum Oxide Abrasive Powder.

The test is conducted by holding a number of test specimens on a flat horizontal disc. The disc is rotated at a speed of 300 rpm with the axis of rotation 22.5 mm out. This causes the abrasive load placed above the test specimen to rub over the surface of test specimen in a circle of 45 cm diameter. The abrasive load is kept in place over the test surface inside a rubber lined cylindrical metallic ring. The ring also keeps the test specimen firmly pressed against the metallic disc.

Construction Details

1. The Resistance to surface Abrasion tester for glazed tiles consists of a fabricated horizontal metal disc, a motorized arrangement to rotate the disc, a pre set type electronic counter, specimen holding ring for holding test specimens on the surface of the disc.
2. The metallic disc is fabricated from mild steel plate. It can be rotated at a vertical axis displaced by 22.5 from the centre of the disc such that any point on its surface traverses through a circle of 45 mm diameter once for each revolution of the disc. A counter weight is fixed on the lower face of the disc to balance the effect of vibrations set up due to its eccentricity.
3. The disc is rotated at a speed of 300 rpm with the help of a motor and V belt and pulley arrangement. A pre set type electronic counter with key lock reset and memory backup is provided to record the total number of rotations of the disc and also to switch off the motor after the desired number of rotations.
4. The test specimens are held against the upper surface of the disc with the help of rubber lined circular rings and holding plates with cover which serve both to hold the test specimens and as containers for abrasive loads placed over them. FOUR such holders are provided to hold up to FOUR test specimens over the disc at one time.
5. The above components are mounted over a rigid metallic base. The equipment is finished in attractive powder coating and

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bright chrome / Zinc plating to give it a corrosion resistant finish.

6. Supplied with steel balls of 1mm - 5mm diameter and WHITE FUSED ALUMINIUM OXIDE 80 GRIT only. Other grinding media at extra cost.

Supplied with ABRASIVE LOAD and ABRASIVE POWER as per following (A)

(A) For Wet Abrasion Load (Standard supply)

1. Steel Balls of 5, 3, 2 & 1 mm diameter
2. White fused alumina oxide of 80 grit

(B) For dry abrasive Load (At Extra cost)

1. Porcelain cylinders (set of 50 cylinders of 20 mm length X 20 mm dia and 50 cylinders of 15 mm length X 15 mm dia.
2. Silicon Carbide powder of 30 grit
3. Float Glass of size 100 X 100 X 10 mm (set of 100 nos.)

Technical Specification

•Diameter of rotating disc	: 580 mm
•Eccentricity of axis of rotation of the disc	: 22.5 mm
•Speed of rotation of disc	: 300 ± 10 rpm
•Max. no of test specimens tested at a time	: 4 numbers
•Inside diameter of specimen holding ring	: 83 mm
•Distance of centre of test area from center of disc	: 195 mm
•Electric Motor power	: 1/4 HP Single-phase, 230 Volts, 50 Hz, AC supply
•Digital counter	: 4 digits pre-set type electronic counter with memory back up and key-lock reset

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TILE ABRASION TESTING MACHINE WITH DIGITAL COUNTER-

Compliance Standards:
IS : 1237-1980, IS : 1706 - 1972

Applications:
This is used for determination of resistance to wear for Cement & Concrete flooring tiles.

How it works?:
The tile sample of 7.06 cm x 7.06 cm is pressed under a specified load against a grinding path strewn evenly with an abrasive powder revolving at the rate of 30 ± 1 r.p.m. At the end of 100 revolutions of the disc, the second parallel side of the tile is subjected to wear for an equal number of revolutions of the disc. The wear of tile is measured using a thickness gauge

Details of the equipment:
The Abrasion testing machine consists of following parts and accessories

- A replaceable grinding path fitting on to a disc rotating its vertical axis.
- e rotating disc and grinding path are enclosed by a circular tray.
- A bracket to hold the test specimen of 7.06 cm x 7.06 cm size.
- The loading is by a counter balanced lever.
- A funnel is provided to facilitate charging the grinding path with abrasive powder.
- Supplied complete with automatic preset revolution counter and one 7.5 kg weight
- Also supplied with 1 kg abrasive powder and dial thickness gauge of 0.01 x 25mm to measure abrasion of tile after the test.
- Suitable for operation 230 V, single phase, Ac supply.

Optional accessories at extra cost:
1) Electronic balance 2 kg x 0.1 Grams @ Rs 7950.00

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ABRASION TESTING MACHINE FOR GLAZED TILES-(8 SAMPLES)-(BIS 13630-11, EN ISO 10545-7)

Compliance with following International Standards

IS : 13630 (Part 11), ISO : 10545 (Part 7)

Operating Principle

The ability of glazed tiles to resist surface abrasion encountered in everyday use is determined by abrading the glazed surface either with a wet abrasive media consisting of steel balls of 1 to 5 mm diameter, aluminum oxide abrasive powder, and distilled water; or with a dry abrasive media consisting of porcelain cylinders and Aluminum Oxide Abrasive Powder.

The test is conducted by holding a number of test specimens on a flat horizontal disc. The disc is rotated at a speed of 300 rpm with the axis of rotation 22.5 mm out. This causes the abrasive load placed above the test specimen to rub over the surface of test specimen in a circle of 45 cm diameter. The abrasive load is kept in place over the test surface inside a rubber lined cylindrical metallic ring. The ring also keeps the test specimen firmly pressed against the metallic disc.

Construction Details

1. The Resistance to surface Abrasion tester for glazed tiles consists of a fabricated horizontal metal disc, a motorized arrangement to rotate the disc, a pre set type electronic counter, specimen holding ring for holding test specimens on the surface of the disc.
2. The metallic disc is fabricated from mild steel plate. It can be rotated at a vertical axis displaced by 22.5 from the centre of the disc such that any point on its surface traverses through a circle of 45 mm diameter once for each revolution of the disc. A counter weight is fixed on the lower face of the disc to balance the effect of vibrations set up due to its eccentricity.
3. The disc is rotated at a speed of 300 rpm with the help of a motor and V belt and pulley arrangement. A pre set type electronic counter with key lock reset and memory backup is provided to record the total number of rotations of the disc and also to switch off the motor after the desired number of rotations.
4. The test specimens are held against the upper surface of the disc with the help of rubber lined circular rings and holding plates with cover, which serve both to hold the test specimens and as containers for abrasive loads placed over them. Eight such holders are provided to hold up to eight test specimens over the disc at one time.
5. The above components are mounted over a rigid metallic base.
6. The equipment is finished in attractive powder coating and bright chrome / Zinc plating to give it a corrosion resistant finish.
7. Supplied with steel balls of 1mm, 2mm, 3mm and 5mm diameter and white fused alumina oxide powder only. Other grinding

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media at extra cost

Supplied with ABRASIVE LOAD and ABRASIVE POWER as per following. (A)

(A) For Wet Abrasion Load

1. Steel Balls of 5, 3, 2 & 1 mm diameter
2. White fused alumina oxide of 80 grit

(B) For dry abrasive Load (At Extra cost)

1. Porcelain cylinders (set of 50 cylinders of 20 mm length X 20 mm dia and 50 cylinders of 15 mm length X 15 mm dia.
2. Silicon Carbide powder of 30 grit
3. Float Glass of size 100 X 100 X 10 mm (set of 100 nos.)

Technical Specification

•Diameter of rotating disc	**: 580 mm**
•Eccentricity of axis of rotation of the disc	**: 22.5 mm**
•Speed of rotation of disc	**: 300 ± 10 rpm**
•Max. no of test specimens tested at a time	**: 8 numbers**
•Inside diameter of specimen holding ring	: 83 mm
•Inside height of specimen holding rings	**: 25.5 mm**
•Distance of centre of test area from center of disc	: 195 mm
•Electric Motor power	: 1/4 HP Single phase, 230 Volts, 50 Hz, AC supply
•Digital counter	**: 4 digits pre set type electronic counter with memory back up and key lock reset.**

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DEEP ABRASION MACHINE FOR UNGLAZED TILES-(ISO 10545-6)

Compliance with following International Standards:

IS : 13630 (Part 12), ISO 10545 (Part - 6)

Operating Principle:

The ability of unglazed tiles to resist deep abrasion is determined by holding the tile under test in a vertical plane and pressing it against a steel disc rotating at a specified speed. The abrasive material of specified grit size is dropped from a funnel at fixed rate so as to fall between the face of the tile under test and the steel disc. The length of impression produced on the surface of the tile under test is measured. The volume of material abraded away from the tile is calculated to evaluate resistance to deep abrasion of the tile under test.

Construction details:

The Resistance to Deep Abrasion Tester for unglazed tiles consists of following parts and accessories.

1. A metal disc held with its axis lying in a horizontal plane
2. A motorized arrangement to rotate the disc,
3. A pre-set type electronic counter to record the number of rotations of the disc and also to automatically stop the motor after a preset number of rotations
4. A frame to hold the test specimen in a vertical plane tangential to the circumference of the metal disc
5. A trolley on which the test specimen holder is mounted and
6. Dead weights to pull the trolley to press the test specimen against the metal disc.

The metal disc is made of commercially available mild steel. It can be rotated about a horizontal axis at the specified speed with the help of an electric motor and a two stage V-belt and pulley arrangement. A pre-set type electronic counter with reset and memory backup is provided to record the total number of rotations of the disc and also to switch off the motor after the desired number of rotations.

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Abrasive material in form of fused aluminum oxide powder of 80-grit can be dropped between the test specimen and the outer face of metal disc from a funnel to abrade the test specimen. A storage hopper for the abrasive materials is placed over the funnel to give a continuous supply of the material to it. The rate of flow of abrasive material can be controlled manually with the help of a ball valve fitted below the hopper.

The above components are mounted over a rigid metallic frame. A collection tray for used abrasive material is placed in the frame. Transparent Silica Glass pates of size 150 X 150 X 10 mm is supplied for calibration purpose. The abrasive material (white fused aluminum oxide of grit no. 80) needed for conducting the test is available as optional spare. The equipment is finished in grey hammertoe stoving painting and bright chrome/zinc plating to give it a corrosion resistant finish.

Technical Specification

•Diameter of steel disc	**: 200 ± 0.2 mm**
•Thickness of steel disc	**: 10 ± 0.1 mm**
•Material of steel disc	: Mild steel (Commercially Grade)
•Speed of rotation of disc	**: 75 ± 5 rpm**
•Force applied on test specimen	**: Adjustable between 5 and 20 kg in steps of 1 kg.**
•Motor	: 1/4 HP single-phase 230 volts AC
•Counter	**: 3 digit pre-set type electronic counter with memory back up and push button reset.**
•Capacity of storage hopper	**: 5 liters**
•Power Supply	: 230 volts, 50 Hz, Single Phase, AC Supply
•Weight	: 90-100 Kgs Approx.

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