



**EIE INSTRUMENTS PVT. LTD.**  
(An ISO 9001:2015 Certified Company)

# ASTM D5397 - NOTCHED CONSTANT TENSILE LOAD TESTER - STRESS CRACK RESISTANCE OF HDPE GEOMEMBRANES



## Compliance Standards

ASTM D5397, IS 16346:2015

## Applications

Notched Constant Tensile Load Testing Machine for Plastic is used to evaluate the stress crack resistance of polyolefin geomembranes by notched constant tensile load test. It is mainly applicable to the geomembranes used on the landfill site. Dumbbell shaped notched test specimens from a polyolefin sheet are subjected to a constant tensile load in the presence of a surface-active agent and at an elevated temperature. The time to failure of test specimens is recorded and the results of a series of such tests conducted at different stress levels are presented by plotting stress level against failure time for each stress level on a log-log axis.

## Salient Features

- Rust resistant exterior body (Mild Steel Powder coated)
- HMI Touch screen & PLC Controller
- Quick and easy operation
- Total 30 working positions (06 Groups each having 05 racks)
- Can achieve separate timing of each rack
- Each group can be loaded with a different yield stress
- 30 working positions which supports 05 groups test under 20%-65% yield stress
- Each group calculates load quality automatically
- Provides 02 methods of timing determination method and damage time determination method; And after the test is completed, the rupture time and average rupture time of each sample in each stress section can be consulted at any time to facilitate the analysis and judgment of the results.

- Equipped with a circulating pump to ensure the uniform temperature of the test medium and improve the accuracy of the test.

#### Comes with following parts and accessories

1. **Blanking Die** — A die suitable for cutting test specimens to the dimensions and tolerances shown in Fig. (All dimension is in mm)
2. **Notching Device** — A device or machine that can produce a consistent notch depth.
3. **Blade** — A single-edged razor made of carbon steel. The tip profile is that of an arrow rather than that of a chisel point. The sharpness of the point is critical to the cleanliness of the cut which effects the results of the test significantly
4. **Waterbath**

#### Technical Specification

|                           |   |                                                                            |
|---------------------------|---|----------------------------------------------------------------------------|
| •Exterior body            | : | Mild Steel material                                                        |
| •Inner chamber            | : | Stainless Steel S.S. - 304 Grade material                                  |
| •Insulation               | : | 50mm thick glass wool insulation on all sides.                             |
| •Load Application         | : | Through Lever-Arm ratio (Indirect Loading Method)                          |
| •Lever ratio              | : | 1:3                                                                        |
| •Loading Capacity         | : | 73 grams - 2022 grams                                                      |
| •Specimen thickness range | : | 0.75 to 3 mm                                                               |
| •Proximity Sensors        | : | To automatically detect the failure time of each working position          |
| •No of work positions     | : | 30                                                                         |
| •No. Of Rack Groups       | : | 06 Groups (Each group is having 05 working positions)                      |
| •Temperature Range        | : | Ambient to 100°C                                                           |
| •Temperature controller   | : | Touchscreen HMI & PLC Based PID Auto-Tune Digital Indicator cum Controller |
| •Temperature Accuracy     | : | ±1°C                                                                       |
| •Temperature Resolution   | : | 0.1°C                                                                      |
| •Temperature Sensors      | : | RTD Sensor                                                                 |
| •Timer                    | : | Digital on screen Timer for each working position (30 Individual Timers)   |
| •Timer Accuracy           | : | 1 Second                                                                   |
| •Timer Range              | : | 1 - 9999 seconds                                                           |
| •Circulating Pump         | : | To maintain uniform temperature within the waterbath chamber               |

|                         |   |                                                                                           |
|-------------------------|---|-------------------------------------------------------------------------------------------|
| •Water outlet           | : | Tactfully designed drainage outlet system to remove the bath media at the end of the test |
| •Operates on            | : | 230 Volts, 50 HZ, Single Phase, AC Supply                                                 |
| •Supplied complete with | : | Blanking Die                                                                              |
|                         | : | Notching Device                                                                           |
|                         | : | Manual Hydraulic Press                                                                    |
|                         | : | Loading weights                                                                           |

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