



PRODUCT MANUAL FOR HYDRAULIC PROPS ACCORDING TO IS 8421: 1977

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

| | | | |
|----|---|---------------------|--|
| 1. | Product | : | IS 8421 : 1977 |
| | Title | : | Hydraulic Props |
| | No. of Amendments | : | Nil |
| 2. | Sampling Guidelines: | | |
| a) | Raw material | : | NA |
| b) | Grouping guidelines | : | For each Type of Hydraulic Prop, sample of highest Nominal Yield Load (kN) and highest Extended Length shall be tested to cover Hydraulic Props of with lower Yield Load and Extended Length in the scope of licence |
| c) | Sample Size | : | Two Hydraulic Props along with all accessories |
| 3. | List of Test Equipment | : | Please refer ANNEX – A |
| 4. | Scheme of Inspection and Testing | : | Please refer ANNEX – B |
| 5. | Possible tests in a day : | | |
| | All tests except Static Leakage Test. | | |
| 6. | Scope of the Licence : | | |
| | Licence is granted to use Standard Mark as per IS 8421 : 1977 with the following scope: | | |
| | Name of the product | Hydraulic Props | |
| | Type | Type A/ Type B | |
| | Nominal Yield Load (kN) | 200/250/300/350/400 | |
| | Extended Length | | |

ANNEX A**List of Test Equipment***Major test equipment required to test as per the Indian Standard*

| Sl. No. | Tests used in with Clause Reference | Test Equipment |
|----------------|--|---|
| 1 | Dimensions (Clause 4) | (i) Measuring Tape (ii) Scale |
| 2 | Setting Load Test (Clause 9.3) | (i) Test bench for hydraulic cylinders (comprising of mobile rigid supports, load sensor, pressure gauge) |
| 3 | Load Yield Test (Clause 9.4) | |
| 4 | Release Test (Clause 9.5) | |
| 5 | Static Leakage Test (Clause 9.6) | |
| 6 | Overload Test (Clause 9.7) | (ii) Measuring Tape (iii) Stopwatch (iv) Volumetric Flasks |
| 7 | Internal Examination (Clause 9.8) | Magnifying Glass |

The above list is indicative only and may not be treated as exhaustive.

ANNEX B

Scheme of Inspection And Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING – As per the requirement of IS 8421: 1977.

4. CONTROL UNIT – All props of same type and same yield load manufactured under similar conditions in a day shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

| (1) | | | | (2) | (3) | | |
|--------------|----------------------|---|----------------|--|-------------------|---|-------------------|
| Test Details | | | | Test equipment requirement R: required (or) S: Sub-contracting permitted | Levels of Control | | |
| Cl. | Requirement | Test Method | | | No. of Sample | Frequency | Remarks |
| | | Clause | Reference | | | | |
| 4 | Dimensions | 4.1 | IS 8421 : 1977 | R | All | -- | -- |
| 7 | General Requirements | 7.1 to 7.4 | IS 8421 : 1977 | R | Each prop | -- | -- |
| 9.3 | Setting Load Test | 9.3, 10.1, 10.8 | IS 8421 : 1977 | R | One | Each control unit | -- |
| 9.4 | Load Yield Test | 9.4.1, 9.4.2, 10.2, 10.3, 10.8 | IS 8421 : 1977 | R | Ten | | -- |
| 9.5 | Release Test | 9.5, 10.8 | IS 8421 : 1977 | R | One | Out of 100 hydraulic props or part thereof from each type manufactured in a fortnight | -- |
| 9.6 | Static Leakage Test | 9.6.1, 9.6.2, 9.6.3, 10.4, 10.5, 10.6, 10.8 | IS 8421 : 1977 | R | One | | -- |
| 9.7 | Overload Test | 9.7, 10.7, 10.8 | IS 8421 : 1977 | R | One | | -- |
| 9.8 | Internal Examination | 9.8, 10.8 | IS 8421 : 1977 | R | One | | -- |
| 9.9 | Additional tests | 9.9 | IS 8421 : 1977 | | | | Please see Note 1 |

Note 1: Optional requirement and may be carried out if required or to investigate any novel feature.

Note-2: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-3: The control unit and levels of control as decided by the Bureau are obligatory, to which the licensee shall comply with.