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# International Standard



# 6475/1

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## **Implants for surgery — Metal bone screws — Mechanical requirements and methods of test — Part 1 : Screws with asymmetrical thread, variable fitting (spherical), stainless steel**

*Implants chirurgicaux — Vis métalliques pour os — Propriétés mécaniques et méthodes d'essai — Partie 1 : Vis à filet asymétrique, embase (sphérique) variable, en acier inoxydable*

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**Descriptors :** surgical implants, screws, screw threads, mechanical properties, specifications, tests.

Price based on 2 pages

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6475/1 was developed by Technical Committee ISO/TC 150, *Implants for surgery*, and was circulated to the member bodies in August 1979.

It has been approved by the member bodies of the following countries :

|                |                        |                |
|----------------|------------------------|----------------|
| Australia      | Germany, F. R.         | Romania        |
| Belgium        | India                  | Spain          |
| Canada         | Italy                  | Switzerland    |
| Czechoslovakia | Libyan Arab Jamahiriya | United Kingdom |
| Denmark        | New Zealand            | USA            |
| France         | Poland                 | USSR           |

No member body expressed disapproval of the document.

# Implants for surgery — Metal bone screws — Mechanical requirements and methods of test —

## Part 1 : Screws with asymmetrical thread, variable fitting (spherical), stainless steel

### 1 Scope and field of application

This International Standard specifies the characteristics of, and corresponding mechanical test methods for metal bone screws used in surgery.

It applies to screws of stainless steel conforming to the dimensional requirements of ISO 5835/1.

### 2 References

ISO 5832/1, *Implants for surgery — Metallic materials — Part 1 : Wrought stainless steel*.

ISO 5835/1, *Implants for surgery — Metal bone screws — Dimensions — Part 1 : Screws with asymmetrical thread, variable fitting (spherical)*.

### 3 Material

Bone screws conforming to this specification shall be manufactured from stainless steel, composition B, covered by ISO 5832/1.

### 4 Dimensions

Each of the screws in the test sample shall be examined for conformity with the dimensional requirements specified in ISO 5835/1.

### 5 Mechanical properties

Each of the screws in the test sample shall be tested for the minimum breaking torque and the minimum angle of rotation to failure (see clause 8). The minimum breaking torque and

minimum angle of rotation to failure shall be as specified in the table.

Table — Mechanical properties

| Code and diameter of thread | Breaking torque min. | Angle of rotation to failure min. |
|-----------------------------|----------------------|-----------------------------------|
|                             | N·m                  | ° of arc                          |
| HA 2,7                      | 1,0                  | 180                               |
| HA 3,5                      | 2,3                  | 180                               |
| HA 4,5                      | 4,4                  | 180                               |
| HB 4,0                      | 1,3                  | 90                                |
| HB 6,5                      | 6,2                  | 90                                |

### 6 Surface finish

The surface of metal bone screws shall be free, when examined with the naked eye, of imperfections such as nicks, scratches and other defects that would impair the serviceability of the screw.

The final finish shall be continuous and free, when examined with the naked eye, of marks which are the results of previous operations such as grinding, polishing, burnishing, tumbling, etc.

### 7 Compliance and retests

Should any of the screws in the test sample not comply with any of the requirements, a further sample, comprising at least twice the number of screws of the original test sample, shall be taken from the lot in question and all tested as described above.

Any failure amongst the second sample of screws shall constitute failure of the particular lot of screws to comply with this International Standard.