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**Tapping screw and washer assemblies  
with plain washers**

*Vis à tôle à rondelle plate imperdable*

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## Foreword

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10510 was prepared by Technical Committee ISO/TC 2, *Fasteners*, Subcommittee SC 10, *Product standards for fasteners*.

This second edition cancels and replaces the first edition (ISO 10510:1999), of which it constitutes a minor revision.

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# Tapping screw and washer assemblies with plain washers

## 1 Scope

This International Standard specifies the requirements for tapping screws and plain washer assemblies with thread sizes from ST2,2 to ST9,5 inclusive, flat seating heads and mechanical properties as specified in ISO 2702.

The plain washers are captive, i.e. prevented from disassembly and free to rotate.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1478, *Tapping screws thread*

ISO 1479, *Hexagon head tapping screws*

ISO 1481, *Slotted pan head tapping screws*

ISO 2702, *Heat-treated steel tapping screws — Mechanical properties*

ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method*

ISO 7049, *Cross-recessed pan head tapping screws*

ISO 10669, *Plain washers for tapping screw and washer assemblies — Normal and large series — Product grade A*

## 3 Dimensions

The dimensions of the assembled screws shall conform to the designated product standards for loose parts with the following exceptions:

- screws shall have a shank of such diameter,  $d_s$ , that the washer with dimensions in accordance with ISO 10669 is free to rotate;
- the permitted distance from the underside of the head to the first full thread shall be increased by the maximum thickness of the washer as specified in ISO 10669;
- the transition diameter,  $d_a$ , shall be reduced by the difference between the nominal and thread rolling diameter.

For the dimensions, see Figures 1 to 4 and Table 1.