INTERNATIONAL STANDARD

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Pliers and nippers — Construction worker's pincers — Dimensions and test values

Pinces et tenailles — Tenailles de maçon — Dimensions et valeurs d'essai

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 9242 was prepared by Technical Committee ISO/TC 29, *Small tools*.

Pliers and nippers — Construction worker's pincers — Dimensions and test values

1 Scope

This International Standard specifies the principal dimensions of construction worker's pincers and the test values in order to verify their aptitude to function in conformity with ISO 5744. The general technical requirements are given in ISO 5743.

The construction worker's pincers illustrated in this International Standard are only examples and are not intended to affect the manufacturers' design.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5743 : 1982, *Pliers and nippers — General technical requirements*.

ISO 5744 : 1988, *Pliers and nippers — Methods of test*.

3 Dimensions and test values
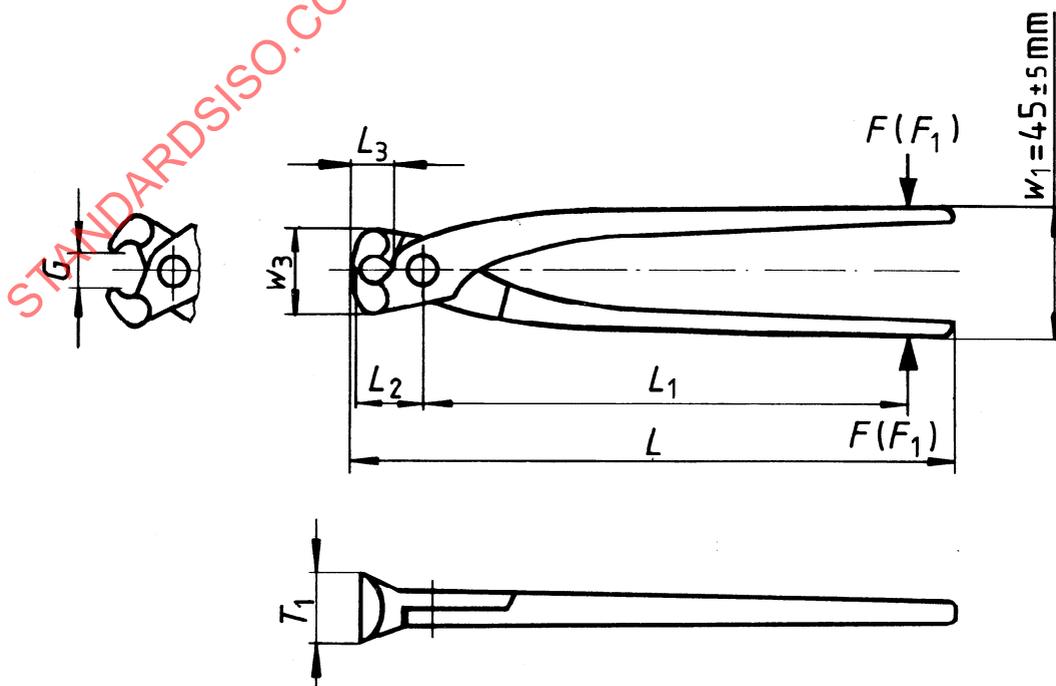
3.1 Construction worker's pincers — Style A

Figure 1

Table 1

Dimensions in millimetres

L	L_3 max.	T_1 min.	w_3 max.	G min.
200 ± 10	18	16	32	14
224 ± 10	20	18	36	16
250 ± 10	22	20	40	18
280 ± 10	25	22	45	20

Construction worker's pincers, style A, shall be tested in accordance with ISO 5744.

After the load test, the permanent set s shall not exceed the value given in table 2. If the distance L_1 is not suitable for the load test, the following formula may be applied:

$$F' = \frac{F \times L_1}{L'_1}$$

where

F' is the load which is not given in table 2;

F is the load given in table 2;

L_1 is the distance from the centre of the joint rivet to the point of application of the load given in table 2;

L'_1 is the measured distance from the centre of the joint rivet to the point of application of the load.

The cutting force F_1 and the diameter D of the test wire shall not exceed the values given in table 2.

Table 2

L	L_1	L_2	Cutting test		Load test	
			Diameter of medium hard test wire D[1]	Maximum cutting force $F_{1, max}$	Load F	Maximum permanent set s_{max}[2]
mm	mm	mm	mm	N	N	mm
200	140	22	1,6	455	710	1,4
224	160	24	1,6	430	800	1,6
250	180	26	1,6	415	900	1,8
280	200	28	1,6	405	1 000	2

1) Data for medium hard test wire are given in ISO 5744.

2) $s = w_1 - w_2$ (See ISO 5744.)

Pincers having a lever ratio differing from the values given in table 2 may be checked for compliance using the following formula:

$$F'_1 = \frac{F_2 \times 1,6 \times L'_2}{L'_1}$$

where

F'_1 is the maximum cutting force which is not given in table 2;
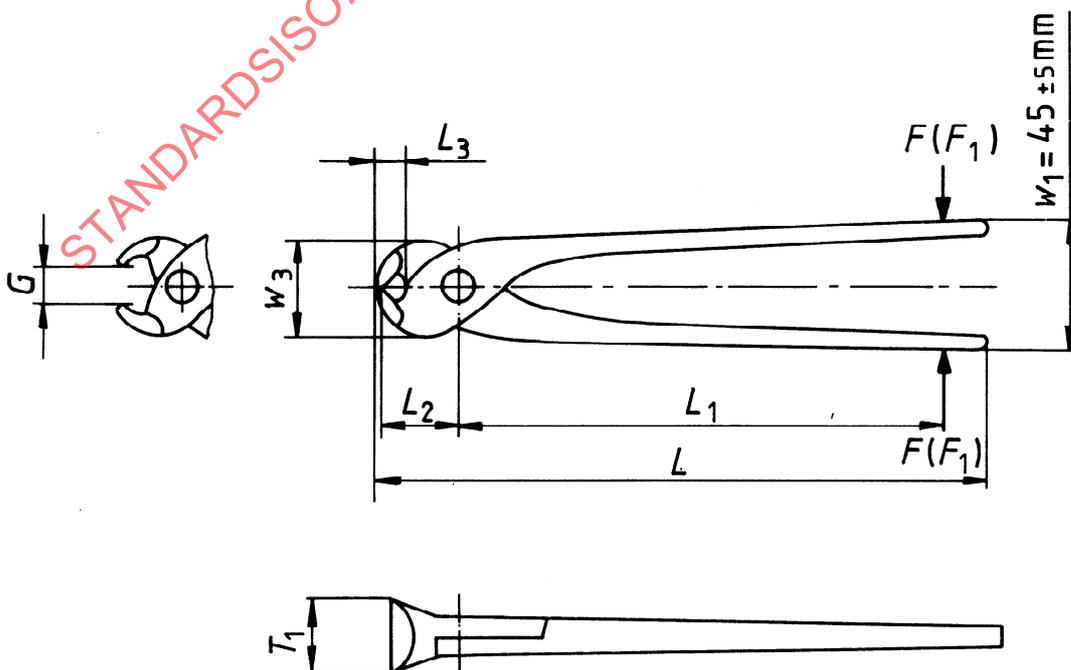
F_2 is the cutting force of medium hard test wire (see ISO 5744);

1,6   is the correction factor for medium hard test wire;

L'_1 is the measured distance from the centre of the joint rivet to the point of application of the load;

L'_2 is the measured distance from the centre of the joint rivet to the cutting edges.

3.2 Construction worker's pincers — Style B

Figure 2

Table 3

Dimensions in millimetres

L	L_3 max.	T_1 min.	w_3 min.	G min.
200 ± 13	18	16	36	14
250 ± 13	22	20	45	16
315 ± 13	28	25	56	18
355 ± 13	32	28	63	20

Construction worker's pincers, style B, shall be tested in accordance with ISO 5744.

After the load test, the permanent set s shall not exceed the value given in table 4. If the distance L_1 is not suitable for the load test, the following formula may be applied:

$$F' = \frac{F \times L_1}{L_1'}$$

where

F' is the load which is not given in table 4;

F is the load given in table 4;

L_1 is the distance from the centre of the joint rivet to the point of application of the load given in table 4;

L_1' is the measured distance from the centre of the joint rivet to the point of application of the load.

The cutting force F_1 and the diameter D of the test wire shall not exceed the values given in table 4.

Table 4

L	L_1	L_2	Cutting test		Load test	
			Diameter of medium hard test wire D[1]	Maximum cutting force $F_{1,\,max}$	Load F	Maximum permanent set s_{max}[2]
mm	mm	mm	mm	N	N	mm
200	132	28	1,6	610	755	1,4
250	170	36	1,6	610	950	1,8
315	212	50	1,6	680	1 190	2,2
355	236	63	1,6	770	1 325	2,5

1) Data for medium hard test wire are given in ISO 5744.

2) $s = w_1 - w_2$ (See ISO 5744.)

Pincers having a lever ratio differing from the values given in table 4 may be checked for compliance using the following formula:

$$F_1' = \frac{F_2 \times 1{,}6 \times L_2'}{L_1'}$$

where

F_1' is the maximum cutting force which is not given in table 4;

F_2 is the cutting force of medium hard test wire (see ISO 5744);

1,6 is the correction factor for medium hard test wire;

L_1' is the measured distance from the centre of the joint rivet to the point of application of the load;

L_2' is the measured distance from the centre of the joint rivet to the cutting edges.

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