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**TEXTILE INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

FZ/T 93048.1-2021

Needles for needle loom - Part 1: Felting needles

针刺机用针 第1部分：刺针

(English Translation)

Issued on: April 19, 2021

Implemented on: July 1, 2021

**Issued by: Ministry of Industry and Information Technology of the
People's Republic of China**

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Foreword

FZ/T 93048 Needles for Needle Loom is planned to be published in parts. The following parts

are currently planned to be published:

---Part 1: Felting Needles;

---Part 2: Fork Needles;

---Part 3: Tapered Needles;

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This is Part 1 of FZ/T 93048.

This Standard was drafted in accordance with the rules provided in GB/T 1.1-2009.

This Part serves as a replacement of FZ/T 93048-2010 Felting Needles. In comparison with FZ/T 93048-2010, the main technical changes are as follows:

---Four terms, including "same edge barb distance" are deleted (see Chapter 2; Chapter 2 of Version 2010);

---The parameters of the felting needles coded 9 and 10 are added, the description of the working part section height of the felting needles with non-triangular cross-sections is added, and the parameters of individual felting needles are adjusted (see Table 1; Table

1 of Version 2010);

- The specifications of felting needles with a nominal length of 80 mm are added (see Table 2; Table 2 of Version 2010);
- The technical requirements for felting needles are modified into the expression in terms of "characteristics" (see 4.2; Chapter 4 of Version 2010);
- The representation of the number of edge barbs of special felting needles is added (see 5.1);
- The test methods, inspection rules, marking, packaging, transportation and storage are deleted (see Chapter 5, Chapter 6 and Chapter 7 of Version 2010);
- Other editorial modifications.

This Part was proposed by China National Textile and Apparel Council.

This document shall be under the jurisdiction of Non-woven Machinery Subcommittee of National Technical Committee on Textile Machinery and Accessories of Standardization Administration of China (SAC/TC 215/SC 3).

Needles for Needle Loom - Part 1: Felting Needles

1 Scope

This Part of FZ/T 93048 specifies the terms and definitions, classification and basic structure,

dimensions and characteristics, and marking of felting needles.

This Part is applicable to triangular felting needles and special-shaped cross-section felting needles for needling and consolidating nonwoven fabrics (hereinafter referred to as the felting needles).

2 Terms and Definitions

The following terms and definitions are applicable to this document.

2.1 felting needles

An important device on a needle loom that utilizes its barb to repeatedly puncture the fibers in

the fiber web or the yarns in the fabric to entangle and consolidate to achieve or form surface

functional transformation.

2.2 nominal length

The distance from the tip of the needle to the inside of the crank.

2.3 working part

The working part of the felting needles.

2.4 edge

The naturally formed ridge line of the working part section shuttle.

2.5 barb

The depressions and peaks on the edge of the working part used to hook fibers.

2.6 undercut angle

The included angle between the top surface of the barb and the cross-section of the working

part.

2.7 kick-up

The part of the barb above the edge.

2.8 barb depth

The vertical distance of the barb below the edge.

2.9 barb distance

The distance between two adjacent barbs on the same edge.

2.10 distance from tip to the first barb

The distance from the tip of the needle to the first barb on the first edge.

2.11 crank

A part used for positioning, and at 90° to the needle handle.

2.12 crank position angle

The included angle between the symmetrical centerline of the cross-section of the working part

and the axis of the crank shaft.

2.13 working part section height

The distance from the bottom to the top of the cross-section of the working part.

2.14 point style

The shape of the felting needle tip.

The point style of the felting needles is shown in Table A.1.

3.1 Classification

In accordance with the structural characteristics, the felting needles can be classified into the

following types:

- triangular felting needles;
- tapered felting needles;
- rhombus felting needles;
- other special-shaped needles.

3.2 Basic Structure

The basic structure of the felting needles is shown in Figure 1.

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