

Founding - Equipment for the production of lost patterns for the lost foam casting process

Founding - Equipment for the production of lost
patterns for the lost foam casting process

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12892:2000 sisaldab Euroopa standardi EN 12892:2000 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 08.08.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12892:2000 consists of the English text of the European standard EN 12892:2000.</p> <p>This document is endorsed on 08.08.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p>Käsitlusala: This standard specifies the requirements for tooling for the production for lost patterns by the lost foam process.</p>	<p>Scope: This standard specifies the requirements for tooling for the production for lost patterns by the lost foam process.</p>
--	--

ICS 77.180

Võtmesõnad:

ICS 77.180

English version

Founding

**Equipment for the production of lost patterns for the
lost foam casting process**

Fonderie – Outillages pour la produc-
tion de modèles perdus pour le
procédé de moulage ‘lost foam’

Gießereiwesen – Einrichtungen zur
Herstellung von verlorenen Modellen
für das Vollformgießverfahren

This European Standard was approved by CEN on 1999-12-25.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Contents

	Page		Page
Foreword	3	7.2 Manufacture	10
Introduction	4	7.3 Contraction(s)	12
1 Scope	5	7.4 Required machining allowances (RMA) ..	12
2 Normative references	5	7.5 Tolerances	13
3 Terms and definitions	5	7.6 Marking and labelling	13
4 Order information and delivery conditions	7	8 Quality control	13
4.1 General	7	8.1 Inspection documentation	13
4.2 Points to be discussed	7	8.2 Samples	13
4.3 Mandatory information	8	9 Usage	14
5 Classification	8	9.1 General	14
6 Specifications	9	9.2 Thermal stability	14
6.1 Drawings and/or numerical data and/or master patterns	9	9.3 Pressure (clamping and injection)	14
6.2 Designation	9	9.4 Tooling handling	14
6.3 Sub-contracted services	9	9.5 Tooling location, connection and alignment	14
6.4 Mass	9	9.6 Pattern stripping and handling	14
6.5 Tooling filling systems	10	9.7 Tooling assembly	14
6.6 Tooling temperature	10	9.8 Prevention of pattern distortion	14
7 Manufacturing requirements	10	9.9 Repair and refurbishment	14
7.1 Materials	10	9.10 Packaging and protection	15
		9.11 Other requirements	15
		Annex A (informative) Examples of a dimensional test report and a tooling checklist	16

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 190 "Foundry technology", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2000, and conflicting national standards shall be withdrawn at the latest by August 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Within its programme of work, Technical Committee CEN/TC 190 requested CEN/TC 190/WG 1.30 "Production equipment, tools, foundry auxiliaries (e.g. patterns, permanent moulds, moulding materials)" to prepare the following standard:

EN 12892

Founding – Equipment for the production of lost patterns for the lost foam casting process

This is one of three of European Standards for foundry patterns and tools. The other standards are:

prEN 12883

Founding – Equipment for the production of lost patterns for the lost wax casting process

EN 12890

Founding – Patterns, pattern equipment and coreboxes for the production of sand moulds and sand cores

Introduction

Lost pattern production processes involve the moulding of a pattern. The pattern is then destroyed either prior to or during the casting process.

At present two processes are commonly used:

- investment casting (lost wax process);
- lost foam process.

This standard concerns the lost foam process.

This standard describes the specification for tooling to produce patterns or cores for the lost foam process.

This standard is intended for purchasers, manufacturers and founders. It is also intended to ensure correct interpretation of part and tool drawings/numerical data, and to ensure pattern equipment will produce lost moulds and lost cores, suitable for use and to assist in determining the usually undefined limits of good workmanship. It stresses the need for consultation between the founder, manufacturer (patterns), manufacturer (tooling) and purchaser before work commences.

This standard is intended to assist interested parties in producing tooling for urea or dense polystyrene or expanded material patterns suitable for use to produce castings by the lost pattern process.

There is a complex relationship between the parties who might be involved in specifying, manufacturing, ordering and designing the equipment within the scope of this standard.

NOTE: Figure 1 gives an indication of the relationships that could exist between the four parties concerned.

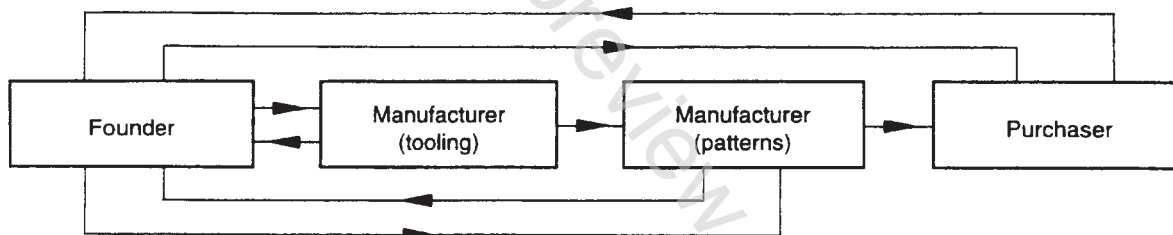


Figure 1 - Model inter-relationships between the contracting parties

This standard not only specifies the usual features of design, manufacture, materials, tolerances, contractions and required machining allowances but also specifies other features such as usage, classification, quality control, marking, packaging and storage.

1 Scope

This standard specifies the requirements for tooling for the production of lost patterns by the lost foam process.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 10204

Metallic products – Types of inspection documents

EN 20286-1

ISO system of limits and fits – Part 1: Bases of tolerances, deviations and fits (ISO 286-1 : 1988)

ISO 8062:1994

Castings – System of dimensional tolerances and machining allowances

3 Terms and definitions

For the purposes of this standard, the following terms and definitions apply:

3.1 collapsible insert

Part made in two or more pieces to permit withdrawal from an undercut pattern surface.

3.2 contraction

Provision applied to the tooling for shrinkage occurring during the production of castings.

3.3 dowel register

Component which ensures accuracy of fit or alignment between mating portions of the tooling.

3.4 taper

Draft angles on surfaces of tooling parts or lost patterns which enable the tooling parts or the lost patterns to be withdrawn.

3.5 fixing

One or more components which ensure that the parts of the tooling are held together securely and accurately.

3.6 insert or loose piece

Part which is removed by hand or by mechanical means from the pattern before or during stripping and is then repositioned in the tooling.