

Position Paper

PP Instructions 2018-06-13



Interpretation of the Machinery Directive (MD) 2006/42/EC regarding "instructions" for metallurgical machinery/plant

Introduction

EUnited Metallurgy is a sector group of EUnited aisbl, Boulevard A. Reyers 80, 1030 Brussels (Belgium). Register Number BE 874.269.908.

EUnited Metallurgy is the voice of the European suppliers of plants, mechanical and electrical equipment, components, automation solutions and services for

- the processing of raw materials,
- iron-making and other reduction processes,
- steel and non-ferrous metal production,
- casting of steel and non-ferrous metals,
- rolling of flat and long products, metal processing and finishing.

EUnited Metallurgy welcomes policies, which favor the development and testing of industrial innovation in Europe. EUnited Metallurgy invests in European initiatives which spur the performance of metallurgical industries vis-à-vis more sustainable use and re-use of materials and energy.

Aim

This Position Paper aims at:

- providing concrete suggestions to establish a common understanding for a complementary, coherent and consistent interpretation of the MD regarding "instructions";
- the content and amount of instructions like descriptions, diagrams, drawings and explanations necessary for the use/operation, maintenance and repair of the machinery and for checking its correct functioning; and
- proposing the language of complementary information.

In this context, EUnited Metallurgy calls regulators and customers to support the statements of this Position Paper.

EUnited aisbl
Register Number 0874.269.908

President: Wilfried Eberhardt
Executive Director: Jethro Schiansky
www.eu-nited.net

EUnited Metallurgy
European Metallurgical Equipment
Association

Chairman: Benoît Caratgé
Director: Dr. Timo Würz

Headquarters
EUnited
Diamant Building
Boulevard A. Reyers 80
1030 Brussels
Belgium

Division contact
EUnited Metallurgy
Sector Office Frankfurt
Lyoner Straße 18
60528 Frankfurt/Main
Germany

1 Background

Metallurgical machinery/plant (machinery/plant is understood as an "assembly of machinery" according to Machinery Directive 2006/42/EC) are subject to various European Directives.

In the first place the Machinery Directive applies. Based on the MD, sector-specific C-type standards have been developed in CEN/TC 322 "Equipment for making and shaping of metals – Safety requirements" (see Annex A). The Guide to application of the Machinery Directive 2006/42/EC (MD-Guide) is also of particular importance.

Furthermore, other Directives are of particular interest, e.g., Pressure Equipment Directive, ATEX Directive and Low-Voltage Directive.

Based on the requirements of the MD, metallurgical machinery/plant must be accompanied by instructions. Instructions are intended for use/operation and maintenance of the machine and for checking its correct functioning.

NOTE Maintenance is defined as a combination of service, inspection, reconditioning and functional test of the equipment according e.g., EN 15093

In this regard the question arises, if every single information of the instructions must be translated in the required language, or is it sufficient to translate only the instructions required by the MD like descriptions, diagrams and drawings regarding normal operation and maintenance?

It must be clear that the instructions are aimed at the professional user, taking into consideration (14) and (15) of the MD (see Figure 1 hereafter).

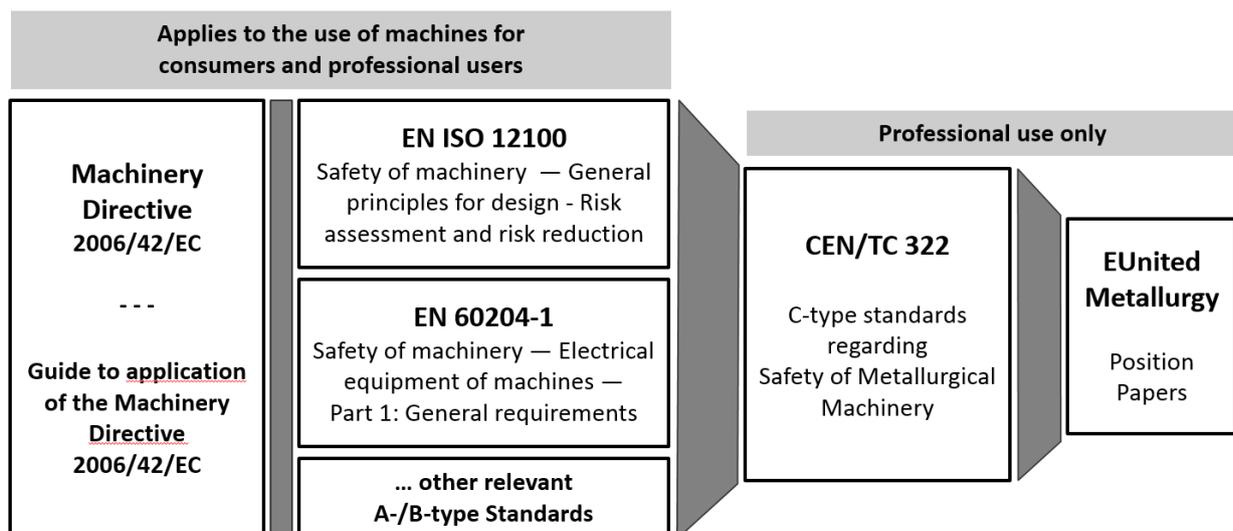


Figure 1: Relationship between consumers and professional users

The complexity of metallurgical machinery/plant requires the professional user to involve qualified specialist departments and employees (i.e., specialised personnel according MD and MD-Guide) for tasks of maintenance. Such activities are based on existing technical qualification and, if requested, additional machine-specific training courses.

Another sensitive issue is the meaning of "maintenance" and "repair" because there is no generally valid definition available. The different definitions of the MD, EN ISO 12100 and sector-related C-type standards – as well as the non-consistent translations – also lead to confusion.

The following statements are intended to contribute to the clarification of these issues.

2 Requirements regarding instructions for users (consumer vs professional user)

Annex I, Part 1, subclause 1.7.4 of the MD describes the content of instructions for consumer and professional products but does not go into the specifics of the metallurgical machinery/plant in sufficient detail.

1.7.4 Instructions

[de: Betriebsanleitung; fr: Notice d'instructions; it: Istruzioni]

All machinery must be accompanied by instructions in the official Community language or languages of the Member State in which it is placed on the market and/or put into service.

The instructions accompanying the machinery must be either 'Original instructions' or a 'Translation of the original instructions', in which case the translation must be accompanied by the original instructions.

By way of exception, the maintenance instructions intended for use by specialised personnel mandated by the manufacturer or his authorised representative may be supplied in only one Community language which the specialised personnel understand.

The instructions must be drafted in accordance with the principles set out below.

In our context (i.e. language of instructions), the MD-Guide states:

§256 The language of the instructions

As a general rule, all health and safety related instructions must be supplied in the official EU language or languages of the Member State in which it is placed on the market and/or put into service – see §246: comments on section 1.7.1.

The second paragraph of section 1.7.4 should be understood in light of section 1.7.4.1. Machinery must be accompanied by original instructions, that is to say, instructions verified by the manufacturer or his authorised representative. If original instructions are not available in the language(s) of the Member State in which the machinery is placed on the market and/or put into service, machinery must be accompanied by a translation of the original instructions together with the original instructions. The purpose of the latter requirement is to enable users to check the original instructions in case of doubt about the accuracy of a translation.

The third paragraph of section 1.7.4 foresees an exception to the general requirement set out in the first paragraph relating to the language of instructions. It applies to maintenance instructions intended for use by specialised personnel mandated by the manufacturer or his authorised representative. Such specialised personnel may either be staff of the manufacturer or of his authorised representative or of a company that has a contract or written agreement with the manufacturer or his authorised representative to service the machinery concerned. Instructions that are exclusively intended for such specialised personnel do not necessarily have to be supplied in the language(s) of the country of use but can be supplied in a language understood by the specialised personnel.

This derogation does not apply to instructions for maintenance operations that are to be carried out by the user or by maintenance personnel mandated by the user. For the derogation to be applicable, the manufacturer's instructions to the user must therefore specify clearly which maintenance operations are only to be carried out by specialised personnel mandated by the manufacturer or his authorised representative.

Despite the explanations in §256, some questions remain open:

- the language of instruction for specialised personnel (see 3rd para) is still an open question, because there is no generally valid definition for "maintenance" available (see second last para of clause 1);
- specialised personnel not only includes employees of the manufacturer (or authorized representative or company contracted by the manufacturer) (see 3rd para) but also employees of the customer (usual practice in metallurgical plants);

- a delineation of the work which may be carried out by specialised personnel, who have a mandate from the manufacturer to carry out this work, is not practicable (see last para).

In the MD-Guide one can find further indications in §167 and §259.

§167 clearly distinguishes between professional use and end users:

§167 Operator

The definition of 'operator' gives the term a very broad sense. ... In the case of machinery intended for use at the workplace, the operators may be professionals who may or may not have been specially trained. In the case of machinery designed for use by consumers, the operators using the machinery are non-professional and must be assumed not to have been specially trained. ...

§ 259 again points out that the instructions for the respective addressees must be adequately formulated:

§259 Instructions for non-professional users

Paragraph (d) of section 1.7.4.1 makes a distinction between machinery intended for non-professional operators and machinery intended for professional use. The wording and layout of the instructions must be adapted to the public to whom they are addressed. Instructions for non-professional users must be written and presented in language that is understandable to laypersons, avoiding specialist technical terminology. This requirement is also relevant for machinery that may be used both by professionals and non-professionals.

...

Therefore, for machines for non-professional users, it must generally be assumed that they are laypersons and therefore a simple comprehension of the instructions without technical terms is necessary.

The reversal conclusion is, that professional users involve professional staff, able to understand specialist technical terminology. Form, scope and language of the instructions shall therefore be addressed accordingly.

Various European standards, e.g., EN ISO 12100 and EN 82079 provide further indications and guidance regarding instructions. However, these are also not focused on professional users.

This results in the need for metallurgical machinery/plant manufacturers to describe specific requirements and, as the MD-Guide suggests, to be anchored in an applicable C-type standard.

In Annex I, Part 1, subclause 1.7.4.2 of the MD the contents of the instructions are described. The text is listed below.

Commentary will be given on the sections that raise questions for EUnited Metallurgy and need clarification.

1.7.4.2 Content of the instructions

Each instruction manual must contain, where applicable, at least the following information:

- (a) *the business name and full address of the manufacturer and of his authorized representative;*
- (b) *the designation of the machinery as marked on the machinery itself, except for the serial number (see section 1.7.3);*

- (c) *the EC declaration of conformity, or a document setting out the contents of the EC declaration of conformity, showing the particulars of the machinery, not necessarily including the serial number and the signature;*
- (d) *a general description of the machinery;*
- (e) *the drawings, diagrams, descriptions and explanations necessary for the use, maintenance and repair of the machinery and for checking its correct functioning;*

Commentary to entry e): For metallurgical machinery/plant, due to its complex nature, such instructions will be given to a level and extent defined by the manufacturer considering the limits of capability of the user to handle the machine. For general purpose, i.e. regular operation and preventive maintenance, these instructions shall be given in operator's language, for repair purposes such instructions may be given in an agreed language. Drawings are limited to those necessary to understand the general assembly of metallurgical machinery/plant. . Manufacturing drawings for individual parts as well as detailed diagrams are not part of the instructions.

- (f) *a description of the workstation(s) likely to be occupied by operators;*
- (g) *a description of the intended use of the machinery;*
- (h) *warnings concerning ways in which the machinery must not be used that experience has shown might occur;*
- (i) *assembly, installation and connection instructions, including drawings, diagrams and the means of attachment and the designation of the chassis or installation on which the machinery is to be mounted;*

Commentary to entry i): Metallurgical machinery/plant in general is not foreseen to be assembled, installed or connected by the user himself. Typically, installation and commissioning of such machines is done by the manufacturer's personnel or under supervision of the manufacturer. User's personnel may be involved in such installation and commissioning work under guidance of the manufacturer's personnel. With this background, any information required for assembly and installation is provided in an agreed language and only to an extent which is defined by the manufacturer.

- (j) *instructions relating to installation and assembly for reducing noise or vibration;*
- (k) *instructions for the putting into service and use of the machinery and, if necessary, instructions for the training of operators;*

Commentary to entry k): Metallurgical machinery/plant in general will be put into service (will be commissioned) by manufacturer's personnel at the place of installation. Special skills and experience are required for this work. User's personnel will be involved for training purposes during commissioning and may assist the work under instruction of the manufacturer's specialists. Accordingly, no commissioning instructions in written form will be issued by the manufacturer to the user.

- (l) *information about the residual risks that remain despite the inherent safe design measures, safeguarding and complementary protective measures adopted;*
- (m) *instructions on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided;*
- (n) *the essential characteristics of tools which may be fitted to the machinery;*

- (o) *the conditions in which the machinery meets the requirement of stability during use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns;*
- (p) *instructions with a view to ensuring that transport, handling and storage operations can be made safely, giving the mass of the machinery and of its various parts where these are regularly to be transported separately;*
- (q) *the operating method to be followed in the event of accident or breakdown; if a blockage is likely to occur, the operating method to be followed so as to enable the equipment to be safely unblocked;*
- (r) *the description of the adjustment and maintenance operations that should be carried out by the user and the preventive maintenance measures that should be observed;*
- (s) *instructions designed to enable adjustment and maintenance to be carried out safely, including the protective measures that should be taken during these operations;*
- (t) *the specifications of the spare parts to be used, when these affect the health and safety of operators;*
- (u) *the following information on airborne noise emissions:*
 - *the A-weighted emission sound pressure level at workstations, where this exceeds 70 dB(A); where this level does not exceed 70 dB(A), this fact must be indicated,*
 - *the peak C-weighted instantaneous sound pressure value at workstations, where this exceeds 63 Pa (130 dB in relation to 20 µPa),*
 - *the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at workstations exceeds 80 dB(A).*

These values must be either those actually measured for the machinery in question or those established on the basis of measurements taken for technically comparable machinery which is representative of the machinery to be produced.

In the case of very large machinery, instead of the A-weighted sound power level, the A-weighted emission sound pressure levels at specified positions around the machinery may be indicated.

Where the harmonised standards are not applied, sound levels must be measured using the most appropriate method for the machinery. Whenever sound emission values are indicated the uncertainties surrounding these values must be specified. The operating conditions of the machinery during measurement and the measuring methods used must be described.

Where the workstation(s) are undefined or cannot be defined, A-weighted sound pressure levels must be measured at a distance of 1 metre from the surface of the machinery and at a height of 1,6 metres from the floor or access platform. The position and value of the maximum sound pressure must be indicated.

Where specific Community Directives lay down other requirements for the measurement of sound pressure levels or sound power levels, those Directives must be applied and the corresponding provisions of this section shall not apply;

- (v) *where machinery is likely to emit non-ionising radiation which may cause harm to persons, in particular persons with active or non-active implantable medical devices, information concerning the radiation emitted for the operator and exposed persons.*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100 and in the harmonised standards of CEN/TC 322 (see Annex A) apply.

3.1 Maintenance

According to up-to-date C-type standards of CEN/TC 322, e.g. EN 15093, the following applies:

3.1

maintenance

combination of service, inspection, repair and functional test of the equipment

Note to entry: The purpose is to preserve the working condition or returning to this condition so that the machinery is able to perform the required function (including safety requirements)

3.1.1

service

measure to maintain the nominal condition

Note to entry: The nominal condition can be maintained in general without dismantling/disassembling major parts of the equipment, e. g., by cleaning and lubrication of the work equipment as well as addition or replacement of agents or by replacing tools or operational changing parts (e. g., rolls, knives)

3.1.2

inspection

measure to observe and assess the current condition as well as fault finding

Note 1 to entry: Measures, e. g., measuring, testing, diagnostics including the determination of the causes of wear or damage and the derivation of the necessary consequences for the continued use

Note 2 to entry: 3.1.2 does not cover "material inspection", i.e. to observe and assess the current condition of the material

3.1.3

repair / reconditioning

measure to return to the nominal condition requiring dismantling/disassembling

Note to entry: Measure to replace worn parts, damaged parts, or parts having expired the foreseen lifetime. These parts should meet manufacturers' specifications.

3.1.4

functional test

checking the functionality of the exchanged or repaired parts

Note to entry: It is maybe required to carry out adjustment work, e. g., test runs, verifying safety functions

NOTE 1 Maintenance is the work as described in the manufacturers' instructions to be done regularly or in planned/scheduled way to maintain the functionality of the machinery

NOTE 2 Repair means unexpected/unscheduled corrective measures to re-establish the functionality of a machine

4 State of affairs – Our point of view!

Based on the requirements of the MD, metallurgical machinery/plant must be accompanied by instructions. Instructions are intended for use/operation and maintenance of the machine and for checking its correct functioning.

The following statements are intended to clarify the requirements of the MD with regard to instructions on the basis of common practices:

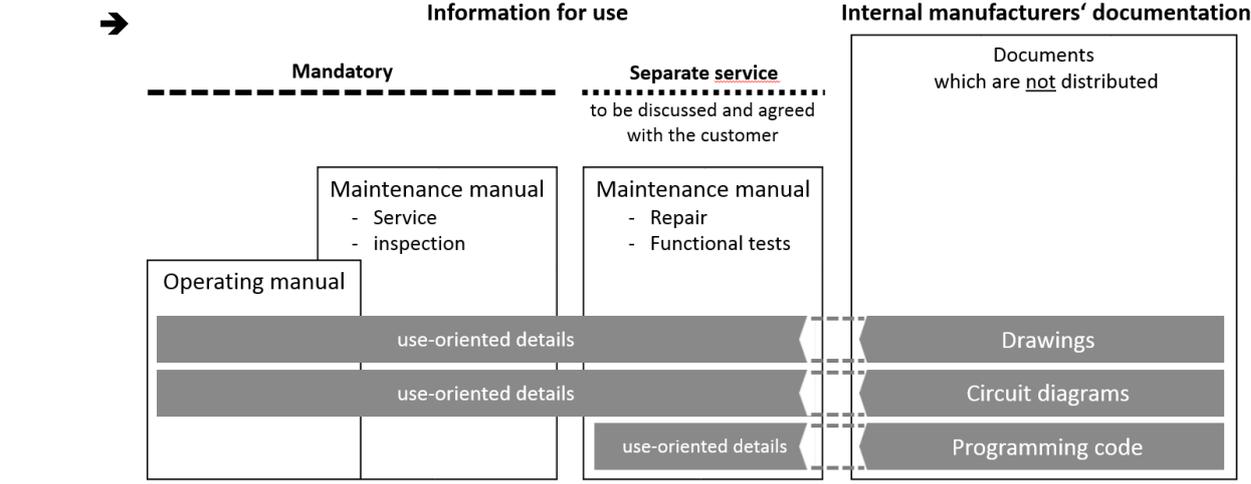
- Metallurgical machinery/plant consists of a complex assembly of machinery for the professional user
 - ➔ The requirements of the MD regarding "instruction" are only applicable to a limited extent.
 - ➔ Instructions can include documents from various suppliers of individual or partly completed machines/equipment as well as components. Those documents should be delivered in the required language or in an official EU language.

- Maintenance is understood as any regular work to maintain the functionality of a machine. The extent of maintenance work is foreseeable and can be described by the manufacturer. It can be planned in advance and scheduled on a regular basis or based on specific events.
 - ➔ Instructions related to operation and maintenance of the assembly of machinery according to the MD shall be provided in the user's language.

- Repair is understood as non-regular work required to re-establish the functionality of a machine. The extent of repair work and scheduling of corrective measures is possible only after a damage occurred, which requires individual analysis. Due to the complexity of metallurgical machinery/plant specific repair work is not covered by instructions. Repair work in any case shall be done by specialised personnel only.
 - ➔ Supplementary information needed for repair work is not covered by instructions. If such information is required by the user, it will be supplied as a separate service in an agreed language.

- Various European standards, in particular EN ISO 12100 provide further information regarding instructions. However, these are also not focused on professional users.
 - ➔ Applicable C-type standards shall be considered regarding specific requirements for metallurgical machinery/plant.

- Proposed structure of Information for use:
 - ➔



Annex A (informative)

List of harmonised C-type standards developed in CEN/TC 322, Equipment for making and shaping of metals – Safety requirements

- **WG 1 "Steel production"**
 - Secondary Steelmaking EN 14677 [2008]
 - Electric Arc Furnaces EN 14681 [2006+A1:2010] ¹⁾
 - Continuous Casting Machines EN 14753 [2008]
 - Steel Converter EN 16774 [2016] ²⁾

- **WG 3 "Rolling Mills"**
 - Long Products Rolling Mills EN 15949 [2012]
 - Tube Rolling & Forming Mills EN 13675 [2004+A1:2010]
 - Hot Flat Rolling Mills EN 15093 [2009]
 - Cold Flat Rolling Mills EN 15094 [2009]
 - *Finishing Line Equipment* *Draft proposal under preparation*

- **WG 4 "Strip Processing Lines"**
 - Strip Processing Lines EN 15061 [2007+A1:2008]

- **WG 5 "Extruding / Forging Presses"**
 - Extrusion Presses EN 14656 [2006+A1:2010]
 - Hydraulically Powered Hot Forging Presses EN 14673 [2006+A1:2010]

The above mentioned EN-Standards are published in the EU Official Journal. The application of these C-type standards leads to the presumption of conformity with the MD.

It is recommended to use these standards (in whole or in part) in case of modernization, if applicable.

¹⁾ EN 14681 is the basic document of ISO 13578:2017. A publication in Europe as EN ISO is planned

²⁾ EN 16774 is the basic document of a new ISO standard, just under development in ISO/TC 244/WG7