

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 12514-1:2003

<https://standards.iteh.ai/catalog/standards/sist/7bbcecaa-e0ac-4b05-b080-99ccf587733e/sist-en-12514-1-2003>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12514-1

March 2000

ICS 27.060.10

English version

Installations for oil supply systems for oil burners - Part 1: Safety requirements and tests ; Parts, oil feed pumps, control and safety devices, supply tanks

Installations des systèmes d'alimentation de fioul pour les brûleurs de fioul domestique - Partie 1: Prescriptions de sécurité et essais ; Composants, pompes d'alimentation de fioul domestique, systèmes de contrôle et de sécurité, réservoir d'alimentation

Ölversorgungsanlagen für Ölbrenner - Teil 1: Sicherheitstechnische Anforderungen und Prüfungen ; Bauelemente, Ölförderaggregate, Regel- und Sicherheitseinrichtungen, Ölversorgungsbehälter

This European Standard was approved by CEN on 21 July 1999.

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.

This European Standard exists 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.

SIST EN 12514-1:2003

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



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents

	Page
Foreword	2
1 Scope	2
2 Normative references	2
3 Definitions	3
4 Safety requirements	11
5 Test methods	15
6 Installation, maintenance and operating instructions	17
7 Marking	17
Annex A (informative) Conformity	18
Annex B (informative) Bibliography	19

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 47 "Atomizing oil burners and their components - Function - Safety - Testing", 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 September 2000, and conflicting national standards shall be withdrawn at the latest by September 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.

SIST EN 12514-1:2003

1 Scope

<https://standards.iteh.ai/catalog/standards/sist/7bbcecaa-e0ac-4b05-b080-99ccf587733e/sist-en-12514-1-2003>

This standard applies to parts, oil feed pumps, oil supply tanks and corresponding control and safety devices of oil supply installations for automatic supply of one or more oil burners or oil consuming units with light fuel oil (maximum viscosity of 10 mm²/s at a temperature of 20 °C) from one or more central storage tanks under static or dynamic pressure. This standard covers all the above mentioned components between the connection to one or more tanks and the connection to oil burners or oil consuming units, including the direct series-connected shut-off devices. EN 12514-2 covers technical safety requirements and tests for parts, valves, pipes, filters, oil de-aerators and meters.

This standard specifies the safety requirements and corresponding tests for all parts, oil feed pump units, oil supply tanks and their control and safety devices within an oil supply installation.

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 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 1

Flued oil stoves with vaporizing burners

EN 267

Forced draught oil burners – Definitions, requirements, testing, marking

EN 12514-2

Installations for oil supply systems for oil burners – Part 2: Safety requirements and tests; parts, valves, pipes, filters, oil de-aerators, meters

- EN 60335-1
Safety of household and similar electrical appliances – Part 1: General requirements (IEC 60335-1 : 1991, modified)
- EN 60529
Degrees of protection provided by enclosures (IP-Code) (IEC 60529 : 1989)
- EN ISO 6806
Rubber hoses and hose assemblies for use in oil burners – Specification (ISO 6806 : 1992)
- IEC 60338
IEC standard voltages
- ISO 228-1
Pipe threads where pressure-tight joints are not made on the threads – Part 1: Dimensions, tolerances and designation

3 Definitions

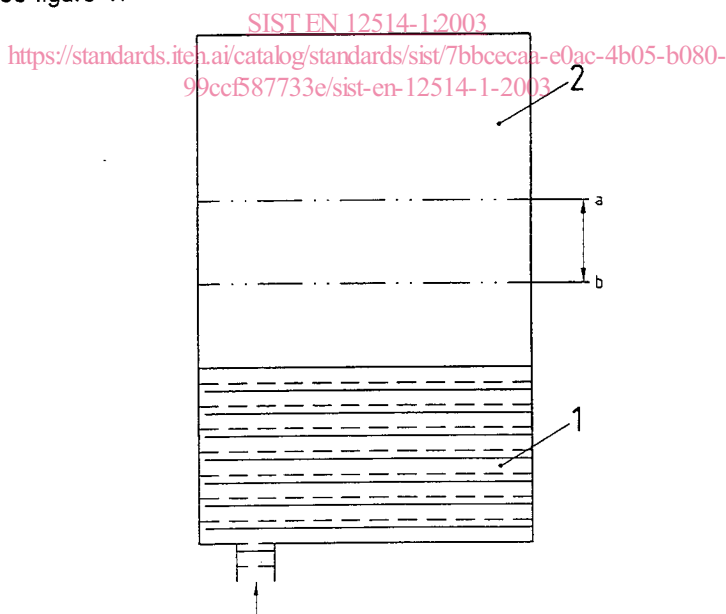
For the purposes of this standard the following definitions apply:

3.1 Oil feed pump: device for pumping fuel oil from the oil storage tank to the oil burners or oil consuming units connected to the oil supply installation.

3.2 Control and safety devices

3.2.1 Control devices

3.2.1.1 Pressure control: device for opening and closing the oil supply to the oil pressure regulating tank depending on the oil pressure, see figure 1.

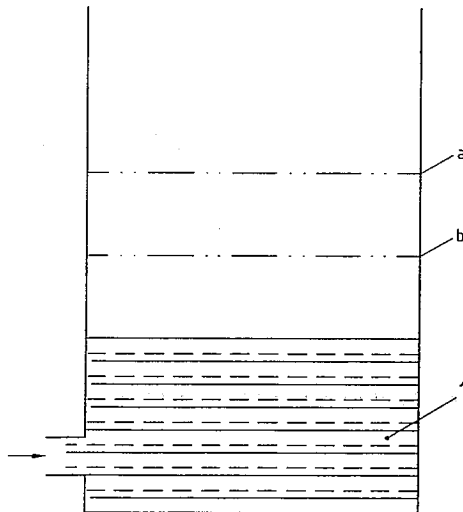


- 1 oil
2 air (gas)

- a p OFF
b p ON

Figure 1: Device for opening and closing the oil supply to the oil pressure regulating tank depending on the oil pressured

3.2.1.2 Level control: device for opening and closing the oil supply to the oil service tank depending on its oil level, see figure 2.



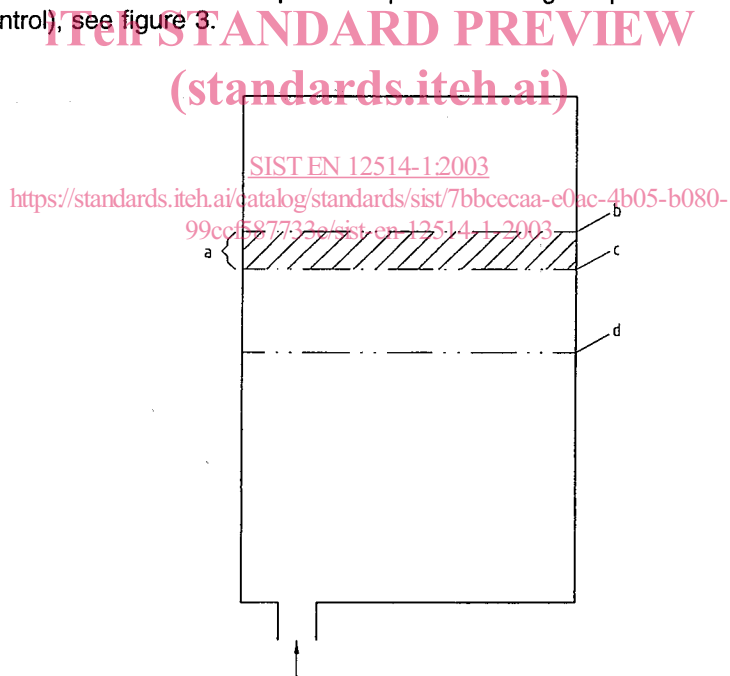
1 oil

a h OFF
b h ON

Figure 2: Device for opening and closing the oil supply to the oil service tank depending on its oil level

3.2.2 Safety devices

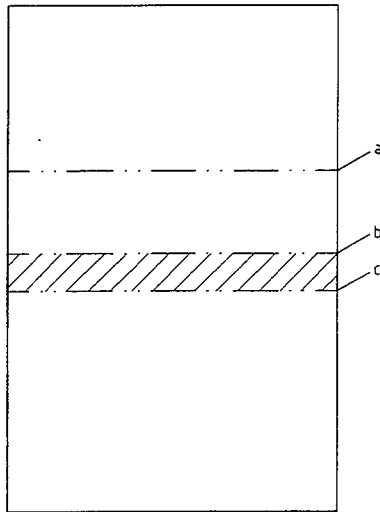
3.2.2.1 High limit controller: device which operates upon exceeding the preset limit values of the control device (pressure or level control), see figure 3.



a p OFF
b p ON
c min. 10 % of the maximum permissible operation pressure
d safety shut-down

Figure 3: Device which operates upon exceeding the preset limit values of the control device (pressure or level control)

3.2.2.2 Low limit controller: device which operates when the oil pressure or level falls below the preset lower limit values of the control device (pressure or level control), see figure 4.



- a p OFF
- b p ON
- c low limit controller

iTeh STANDARD PREVIEW

Figure 4: Device which operates when the oil pressure or level falls below the preset lower limit values of the control device (pressure or level control)

SIST EN 12514-1:2003

3.3 Supply limit (operating capacity): the upper limit of a range. It corresponds to the minimum oil level an oil feed pump can maintain under operating conditions.

3.4 Oil storage tank: tank for central storage of fuel oil, see figure 5.

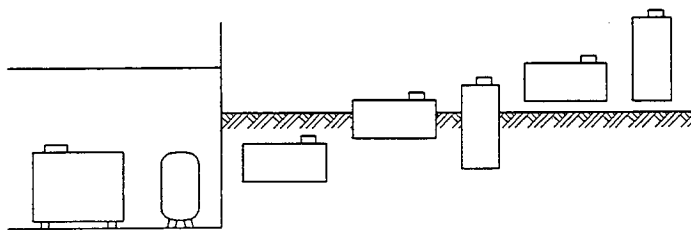
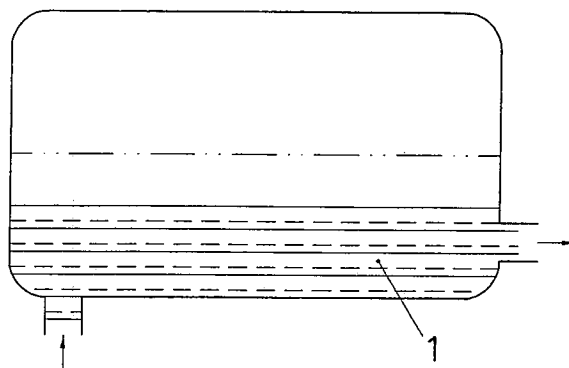


Figure 5: Oil storage tank - examples for arrangement

3.5 Oil supply tank: tank within an oil supply system for intermediate storage of fuel oil, see figure 6. According to construction and purpose, there are different types of tanks, e. g.: (See figures 7 and 8.)

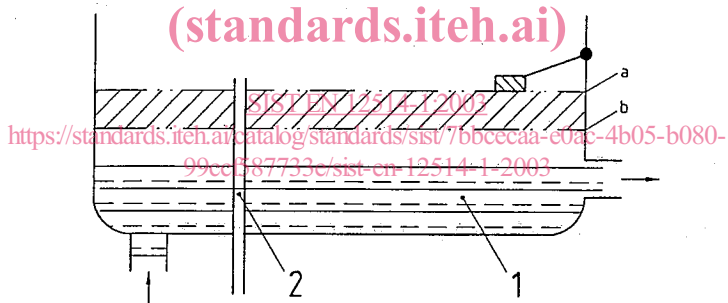


1 oil

Figure 6: Oil supply tank

3.5.1 Oil service tank: tank open to the atmosphere having control and safety devices, see figure 7.

iTeh STANDARD PREVIEW
(standards.iteh.ai)



1 oil
2 overflow pipe (3.6.5)

a h OFF
b h ON

Figure 7: Oil service tank

3.5.2 Pressurized oil tank: pressurized tank with or without control device and with high limit controller and/or low limit controller, see figure 8.

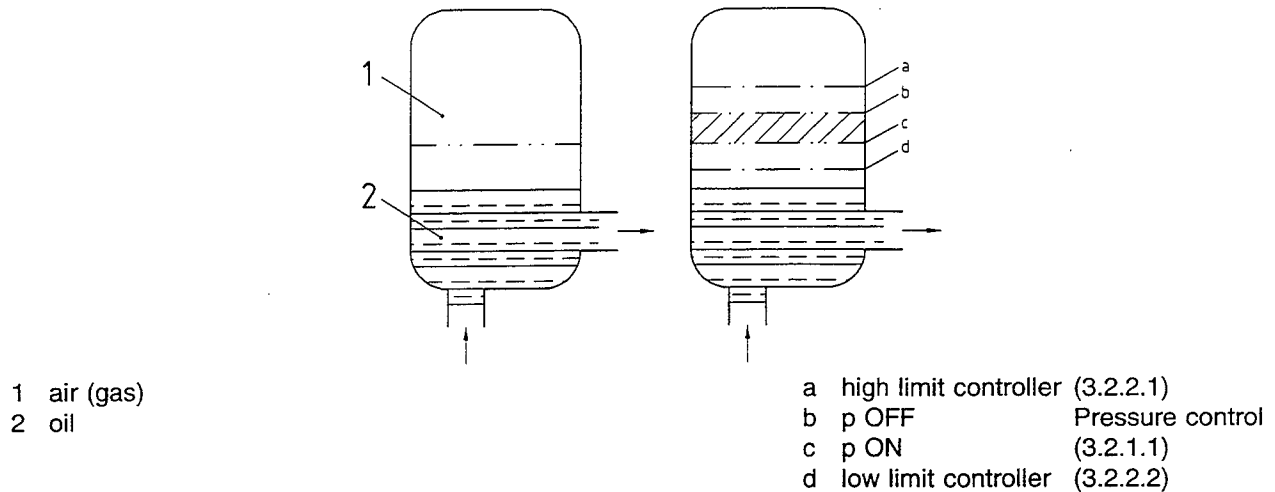
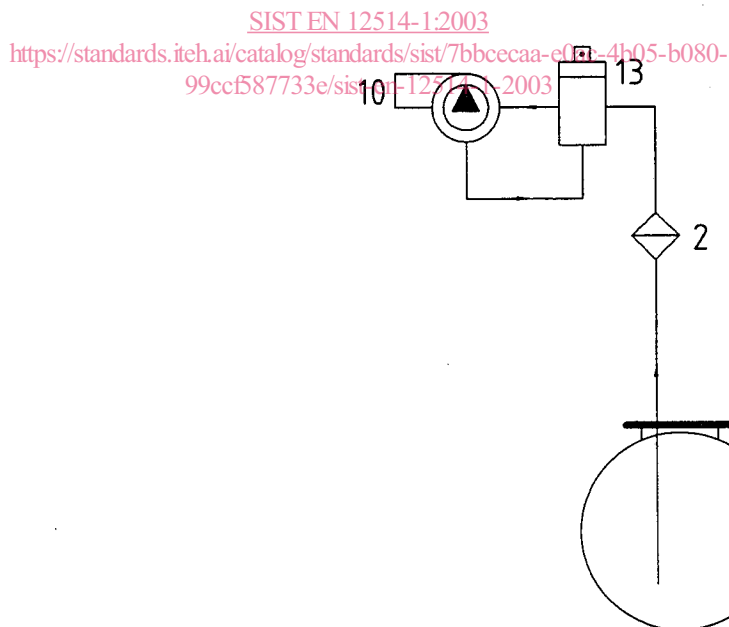


Figure 8: Pressurized oil tank

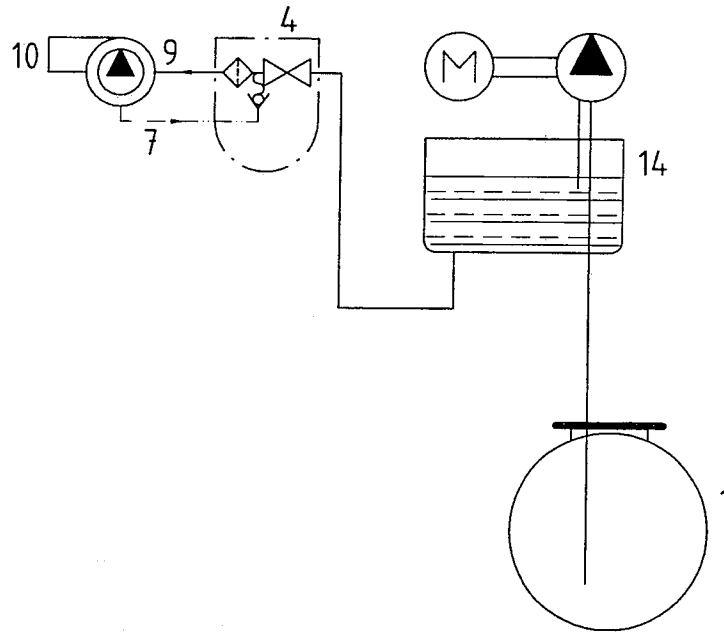
3.6 Oil supply and pipe systems

3.6.1 Single-pipe system: supply system, either as a suction system (see figures 9, 10, 11) or a system operated by dynamic pressure (see figure 12) with a separate oil feed pump. The system supplies only as much oil as the burner(s) require(s).



- 1 tank
2 filter
10 oil burner
13 oil de-aerator

Figure 9: Single-pipe suction system with fuel oil de-aerator



- 1 tank
- 4 combined filter and single-pipe system
- 7 return line
- 9 feed line
- 10 oil burner
- 14 suction feed pump

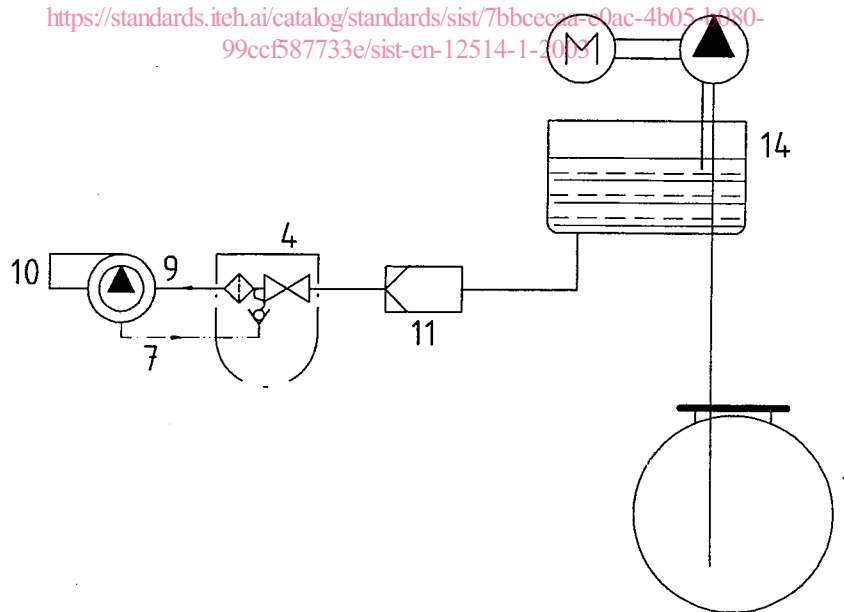
iTeh STANDARD PREVIEW

Figure 10: Single-pipe system with suction feed pump

(standards.iteh.ai)

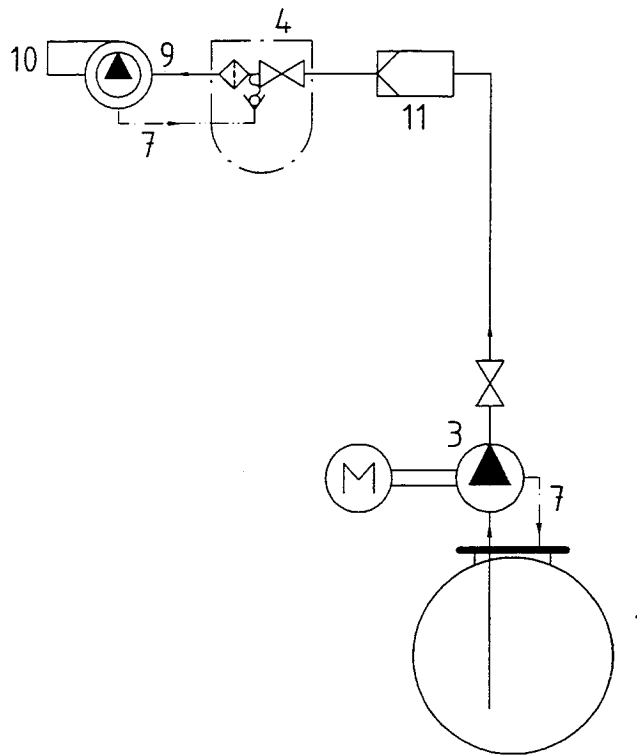
SIST EN 12514-1:2003

<https://standards.iteh.ai/catalog/standards/sist/7bbceca7-c0ac-4b05-b980-99ccf587733e/sist-en-12514-1-2003>



- 1 tank
- 4 combined filter and single-pipe system
- 7 return line
- 9 feed line
- 10 oil burner
- 11 oil pressure controller
- 14 suction feed pump

Figure 11: Single-pipe system with suction feed pump arranged above the burner



iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 12514-1:2003

- <https://standards.iteh.ai/catalog/standards/sist/7bbcecaa-e0ac-4b05-b080-99ccf587733e/sist-en-12514-1-2003>
- 1 tank
 - 3 oil feed pump
 - 4 single-pipe system combined with filter
 - 7 return line
 - 9 feed line
 - 10 oil burner
 - 11 oil pressure controller

**Figure 12: Single-pipe system operated by dynamic pressure combined with single-pipe filter
Oil feed pump for the burner with two-pipe system**

3.6.2 Two-pipe circulation system: supply system in which the oil feed pump sucks the fuel from the oil storage tank by means of a suction line and feeds it to the oil burner(s) (see figure 13). Any excess oil taken is returned to the storage tank via a return line.