

<b>Title of the measure:</b>	<b>SPA4 Heating, Air Conditioning and Sanitary Water Equipment Regulations (Reglamento de Instalaciones de Calefacción, Climatización y Agua Caliente Sanitaria)</b>
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## **General description**

### **1. General contents of the norm**

The Royal Decree 1618/80 of 4 July 1980 establishes the Regulation of Heating Air Conditioning and Sanitary Hot Water Installations

The Order of the Government Presidency of 16 July 1981 set the Complementary Technical Instructions named IT.IC according to what is established in the previous RD1618/80.

The RD 1618/80 establishes the role of the energy consumption in the non industrial thermal installations and advice about the advantages of the rational use of energy consumption.

The Heating, Air Conditioning and Sanitary Water Equipment Instructions involve the regulation and inspection of the energy consumption of space heating, air conditioning and domestic sanitary hot water systems installed in buildings, prescribing standards to be met by equipment which uses energy for non-industrial thermal purposes.

It includes the application norms about the following subjects:

- Equipment Specifications.
- Design and execution of the installation.
- Environmental conditions.
- Operation conditions.
- Manufacture, Installation and Maintenance.
- Projects.

### **2. Technical description of the norm**

The Technical Instructions are organized in 26 paragraphs (from IT.IC.01 to IT.IC.26); herewith is shown a brief description of each one:

**IT.IC.01 Terminology.** It establishes the terminology that will be used in the following paragraphs of the Technical Instructions.

**IT.IC.02 Comfortability and Environmental Requirements.** This Technical Instruction has the objective of developing the fourth paragraph of the regulation named "Environmental Conditions".

It defines the values of different variables that have to be considered and managed with the designed system: temperature, humidity, ventilation, air speed, noises and vibrations, environmental pollution, atmospheric pollution.

**IT.IC.03 Safety Requirements.** All of them must be carefully satisfied, specially the instructions referred to equipment/installations and calculation of security devices/elements.

**IT.IC.04 Performance and Energy Saving Requirements.** The proper heating or conditioning system have to be selected and will have to satisfy all the present instructions, specially those that refer to energy consumption, power breaking, flexibility of the installation service, thermal insulation, etc. It is recommended the utilisation of free or residual energies (solar, geothermal,...) and the exploitation of underground waters as cooling mean or heat source for heating pump.

It is also recommended the installation of all those systems or devices that produce an energy saving if it is economically feasible (e.g. total energy plants, cooling plants with heat recovery, energy recovery equipment, etc.).

**IT.IC.05** Calculation General Norms. The thermal installations will be calculated by a responsible expert technician, who will follow a proper method, considering all the requirements and exigencies of this technical instruction.

**IT.IC.06** Fuels. It defines the norms to be satisfied in the reception, storage and carriers of the fuels used in these installations.

**IT.IC.07** Engine Room. The objective of this instruction is to manage the possible greatest security level inside the engine rooms, taking the proper preventive measures in order to avoid damages in persons and buildings caused by: fires, gas leaks, explosions, floods, etc. It is also compulsory to comply other existing specific norms together with this instruction.

**IT.IC.08** Stacks and flue-gas ducts. This instruction gives all the technical parameters for a proper stack construction (size, boiler manufacturer specifications, ...). It also gives the characteristics of the ducts that will have to be watertight and built of smoke proof and with high temperature proof materials.

**IT.IC.09** Boilers. All the heat equipment will have an energetic identification label in which appears the main data of each equipment, specially the nominal energetic performance.

**IT.IC.10** Burners. Technical data that will have to appear in the burners identification label.

**IT.IC.11** Equipment of Cool Generation. All of them (air conditioning, refrigeration plants, water refrigeration installations, refrigerating engines, etc..) have to satisfy three Regulations: Safety in Refrigeration Plants, Pressure Vessels and the present one, which defines the main specifications required for this kind of machinery.

**IT.IC.12** Other Equipment. This instruction gives the specifications required for those equipment that are not mentioned in other instructions (hot exchangers, pumps, etc.).

**IT.IC.13** Regulation and Control Devices. This instruction provides the main characteristics of the control actions demanded by this Regulation.

**IT.IC.14** Pipes, Valves and Accessories. It defines the technical specifications that must fulfil and also the materials utilised on its manufacturing.

**IT.IC.15** Air Ducts and Accessories. This instruction shows the specifications of the air ducts (ventilation) and accessories. The main subject is about the materials used in the fabrication (fire, pressure and vibration resistance).

**IT.IC.16** General Specifications about Installations. The installations will be designed considering the objective of a correct operation during the life period foresight. This instruction gives advice and norms to reach it.

**IT.IC.17** Specific Instructions for Heating and Sanitary Hot Water Installations.

**IT.IC.18** Specific Instructions for Air Conditioning Systems.

**IT.IC.19** Thermal Insulation. Systems, equipment and pipes that contain bellow ambient temperature fluids or upper than 40°C will have a thermal insulation in order to reduce energy losses.

**IT.IC.20** Complementary Installations. This instruction determines the requirements of those complementary installations that could exist in a heating, air conditioning or sanitary hot water system.

**IT.IC.21** Installation Reception.

**IT.IC.22** Maintenance.

**IT.IC.23** Project of the Installation.

**IT.IC.24** Start-up of the operation

The objective of these four instructions (21,22,23,24) together with the IT.IC.25 is to coordinate several actions by means of some requirements, not strictly technical, that will make possible the technical objectives of energy saving.

**IT.IC.25** Installers and Maintainers

**IT.IC.26** Existing Installations. The Royal Decree 1618/80 determines that it is compulsory to adapt the existing installations to the new regulations. That R.D., together with this instruction establishes the compulsory time limits for these adaptations.

### ***Impact evaluation***

<b>Measure Impact</b>			
<b>low</b>	<b>medium</b>	<b>X</b>	<b>high</b>

### ***Historical data***

The Royal Decree 1618/80 (4 July 1980) establishes the Regulation of Heating, Air Conditioning and Sanitary Hot Water Installations with the aims to racionalizate the energetic consume.

Later, the Order of the Government Presidency of July 16 1981 approved the Complementary Technical Instructions, IT.IC of these Regulations.

### ***References***

- Royal Decree 1618/80 of 4 July 1980 published in BOE nr188 of 6 August 1981.
- Order of the Government Presidency 16 July 1981 BOE 193 of 13 August 1981.