



**LOW VOLTAGE INSTALLATIONS
SECURITY SOUND SYSTEM
SUPERMARKET**

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SUPERMARKET' SPECIFICATIONS

1 GENERAL PERFORMANCE CLAUSES

The purpose of this specification is to describe and define the work required for the sound package.

1.1 Building classification

The entire building is governed by the French Labour Code, and is classified as a type M ERP.

1.2 Minimum conditions for execution

The Contractor of this lot undertakes to carry out all or part of the installation in accordance with the following regulations and standards:

- AFNOR standards: N.F. C 15-100: Low-voltage electrical installations.
- Safety regulations for establishments open to the public (ERP),
- Departmental health regulations.
- The Labour Code.
- The decree of 4 June 1973 concerning the fire behaviour of building materials.
- The decrees of 14 November 1988 and 19 February 1975 and the decree of 10 October 2000 on the protection of workers.
- ISO/IEC v2 ad.1 and EN 50173 v2 standards: architecture, structure and performance of cabling components
- ISO/IEC 14763-1 and 2 standards: administration and expansion of cabling
- ISO/IEC TIA-606 standard: cabling component identification principles
- The cabling entities defined by the ISO 11801 standard
- D.T.U.
- Technical notices.
- Manufacturers' specifications.
- Fire regulations.
- Laws, decrees and regulations concerning personal safety.
- ROHS directive (2002/95/EC): reduction of hazardous substances in electrical and electronic products.
- RT2012 thermal regulations
- WEEE regulations: disposal of waste electrical and electronic equipment
- The EPB directive (Energy Performance of Buildings)
- The provisions of this C.C.T.P.
- Standards EN 60-849
- Standards EN 54-24
- Standards EN 54-16
- Standards NF 61-940

Note: This list is not exhaustive.

The contractor's attention is drawn to the fact that compliance with these standards also obliges him to follow all the standards, legal publications, decrees and circulars in force on the day the work is carried out.

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- The contractor will pay particular attention to the choice of equipment according to the height of the installation and the surface to be treated.
- The public address system will be installed in a fireproof, air-conditioned room.

2 **SOUND SYSTEM**

2.1 **Principle**

The building will be equipped with a public address system for the entire site. The sound system will be based on the following principle:

- A public address system box managing input and output signals,
- Input signals from :
 - Microphone desk with zone selectors,
 - A hand-held microphone,
 - Modulation sources (not included in the set),
- Output signals (100V line) going zone by zone to :
 - Recessed or surface-mounted ceiling loudspeakers,
 - Spherical speakers,
 - Sound projectors.
- All the ducts connecting the various elements.

This public address system will enable :

- Message broadcasting via a microphone desk with zone selector,
- Broadcasting background music from modulation sources installed in a sound rack,
- Animation using a HF microphone.
- A calming evacuation message
- HP line control
- Secondary power supply (AES)
- Automatic back-up for the amplification section

The failure of a single amplifier or loudspeaker circuit must not result in the total loss of coverage of the area served. To achieve this, the loudspeaker lines will be doubled in ERP areas.

The signals in each area will be broadcast according to the following zoning:

- Zone 1 : Sales area
- Zone 2: Social
- Zone 3 : Reserves/labs
- Zone 4: Outdoors
- Zone 5: Mail
- Zone 6 : Drive

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2.2 Main distribution

All cabling will be laid in a low-voltage cable tray.

The company will lay a cable tray as soon as 3 or more cables use the same passageway. Once the cable trays have been laid, the company must fill in all the walls through which they pass, restoring the original fire rating. Expansive foam must not be used.

2.3 Secondary distribution

Secondary distribution will be in IRO tube or distribution trunking. Once the secondary ducts have been laid, the contractor must fill in all the walls through which they pass, restoring the original fire rating. Expansive foam should not be used.

The company must pay particular attention to all these paths, as they will be visible to everyone.

2.4 SECTION 1 ASSETS

2.4.1 GENERAL

The 19' standard public address system will include :

- An integrated pre-amplification/switching system receiving the input signals:
 - A microphone desk
 - An HF receiver (hand-held microphone),
 - Modulation sources,
- An amplifier with several power modules receiving the signals from the preamplifier and serving the 100V lines to the loudspeaker,
- A strip of 8 PC 2x10/16A+T - filter, at the back of the bay powered from the TGO of the inverter.
- A control and monitoring unit

An NC contact on the UGA for the sound cut-off.

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2.4.4 Compact management and monitoring box

The compact alarm and evacuation box will have the following characteristics:

Brand : **RONDSO**
Ref. : **PAW4506-V**



Nbr of entries : 6 lines per zone (A+B)
Output power (RMS) : 500 W
Bandwidth : 60 Hz - 20 000 Hz
Output: 6 outputs (100V)
Accessories : 1 PTT firefighter microphone power cord

2.4.6 AES LThe AES will have the following characteristics:

Brand : **RONDSO**
Ref. : **AES 2406 MS 40**
Output power : To be determined according to the power of the active elements

2.4.7 CD / USB / SD player with tuner

The CD player and tuner will have two modulation sources and the following characteristics:

Brand : **RONDSON**

Ref. : **CDTU**



Source 1: Tuner AM/FM

Source 2: 1 CD MP3 / USB / SD player

Sorties: 2 sources outputs

Accessories: - 1 IR remote
- 1 Mains connection cable External FM antenna

2.4.8 Connection cables

The present lot will be responsible for all the connecting cords between the various internal elements and between the internal and external elements of the sound system.

Brand : **RONDSON**

Details: Cables with plugs at each end

2.5 SECTION 2 COMMUNICATION ELEMENTS

2.5.1 Microphone and Microphone desk

A microphone desk will be provided for the reception area, with the following features :

Brand : **RONDSON**

Ref. : **PMB106-G**



Type : Microphone desk for use with PAW enclosure series 1 24V DC

Accessories : power supply
1 connection cable with RJ45 plug

Location : Home

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2.5.2 HF microphones

A HF microphone will be provided for animations with the following characteristics:

Brand : **RONDSO**
Ref. : **BE-5018/H83**



Type : HF microphone and receiver
Bandwidth : 15 – 20 000 MHz
Frequency: 605 – 670 MHz
Power supply : l'alimentation du récepteur sera prise sur l'ondulé
Particular attention must be paid to determining the position of the receiver to avoid any feedback, loss of reception or other effects.

2.6 SECTION 3 SOUND DIFFUSION ELEMENTS

2.6.1 Speakers

During installation tests, the present lot will adjust the nominal power of each loudspeaker in order to obtain optimum sound quality. The transmission of music or calls to people must not be disruptive. The loudspeakers must not be placed above the microphone desks in order to avoid any 'LARSSEN'. 'LARSSEN'. In all cases, the present lot must ensure that the total power of all the loudspeakers does not exceed the power available at the output of the amplifier. To this end, the main criteria taken into account are as follows:

- Speaker type,
- Axis frequency response curve and bandwidth (- 6dB),
- Characteristic efficiency in dB SPL 1 W / 1 m,
- Nominal power / impedance,
- Power/impedance adjustment options,
- Maximum short-term input power,
- Maximum long-term input power,
- Rate of harmonic distortion at rated power,
- Directivity curves (horizontal and vertical),
- Directivity factor, Implementation, Aesthetics,
- Dust and water protection index (IP),
- Connector quality, Cable entry quality,
- Perceived listening quality: A comparative listening session, organised by the company and at its own expense, may be requested by the project manager.
- Installation height, Surface area to be covered

2.6.2 Recessed loudspeaker

Brand :	RONDSO
Type :	Recessed circular loudspeaker
Ref. :	EN-180FT/EN5424



Ways :	2
Available power (100V line) :	6W
Characteristic efficiency (SPL/1W/1m) :	96 dB
Superior bandwidth:	100 – 15 000 Hz
Directivity at 1kHz :	360°
Colour :	White
Protection rating:	55
Accessories :	
Location :	Social hanging and suspension system

2.6.3 Sound projector

Brand :	RONDSO
Type :	Waterproof sound projector with swivel mount
Ref. :	SPJ 53/EN54-24 et CS-5MHC30BS



Ways :	2
Puissance disponible (ligne 100V) :	5 - 10 - 20W
Characteristic efficiency (SPL/1W/1m) :	91 dB
Top pass band:	130 – 20 000 Hz
Colour :	White
Accessory :	Bracket for ceiling or wall mounting
Location:	Storage, lab, traffic
	SPJ 53/EN54-24
	IP66 CS-5MHC30BS

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2.6.4 Spherical enclosures over 4M

Marque :	RONDSO
Type :	Spherical speakers with 5-metre cord
Réf. :	KM-220-II-30W/EN5424



Ways :	2
Available power (100V line) :	30W
Characteristic efficiency (SPL/1W/1m) :	100 dB
Superior bandwidth:	70 – 20 000 Hz
Directivity :	360°
Colour :	White
Accessories :	Suspension and hanging system
Location :	Sales area and mall

2.7 Pipes

The pipes coming from the sound rack will be made up as follows :

BETWEEN PA CABINET AND LOUDSPEAKER LINE (VIA ATTENUATOR)

Type of cable : according to Euroclass
Cross-section : 2x1.5 mm² CR1 (depending on length)
Laying method : according to specifications § Distribution

All the equipment (Matrix/microphone desk and Matrix/animation deck) will use the building's VDI pre-wiring, and will be wired in 4-pair Category 6a FTP on RJ45 sockets.

The ducts will be laid on the peripheral cable trays and above the false ceilings. Under no circumstances should loudspeaker, sound projector or 360° diffuser lines be routed in the same way as microphone or HF lines.

Each loudspeaker will be connected via a junction box located nearby.

The equipment must be carefully marked with an engraved label on rigid plastic, excluding the DYMO system or equivalent.

The present lot will be responsible for all bracket systems for fixing the HP, whatever the nature of the wall on which they are fixed or embedded.

All vertical HP downpipes will be made using GRIPPLE type wires with Twister.

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2.8 Further information

Consult our design office : contact@rondson.com

Visit the RONDSON website : www.rondson.com



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