



Touch the message experience the future



BROCHURE
MARCH 2023



In accordance with CEN/TS 15209



The LVE Loges Vet Evolution system

The signal and tactile routes integrated system LOGES – VET – EVOLUTION (LVE) is the result of the partnership between the U.I.C.I (Italian union of blind and visually impaired) and the A.D.V ONLUS and in cooperation with the JRC established in the Italian commission and the Università degli studi di Roma “La Sapienza”

The specific innovation of this system is to provide to visually impaired people both tactile and vocal information (only in those places where the vocal service has been activated).

The environment must be compatible with the orientation needs of visually impaired people to guarantee them both safety and autonomy when moving. The blind or partially-sighted people use also some signals called “natural guides” to orient themselves while moving. Some examples of a “natural guide” are: the pavement’s kerb, perceptible with feet or with the white cane, a sound signal of warning, a wall that marks a space.

The tool that allows the sensory access to public places and spaces is the Tactile Ground Surface Indicators (TGSi).





HOW THE SYSTEM WORKS WITH TAG RFG

Components

MAIN CODES

STRAIGHT CM 60 X 60



It consists of a single tile in M-PVC-P size 60x60cm, with parallel grooves. It indicates the rectilinear direction integrated with TAG RFG 134.2 Khz

(computable in mtl)



STOP / DANGER CM 40 X 60



It consists of a single tile in M-PVC-P size 40x40 with a design of studs of semicircular shape arranged in a parallel pattern. It indicates stop/danger. Integrated with TAG RFG 134.2 Khz

(computable in mtl)



SECONDARY CODES

PASSABLE DANGER CM 40 X 60



It consists of a single tile in M-PVC-P size 40x60 with a combination of two codes Danger and Service followed by Stop/Danger and it indicates a danger that can be carefully overcome.

(computable in pieces)



ATTENTION / SERVICE CM 40 X 60



It consists of a single tile in M-PVC-P size 40x60 that informs about a service close to the tactile path.

(computable in pieces)



"+" OR "T" INTERSECTION



It consists of a single tile in M-PVC-P size 60x60 with small segments arranged as a grid. It indicates a cross T or + shaped.

(computable in pieces)



OBLIGED TURN AT 90°



It consists of a single tile in M-PVC-P size 60x60 used to link two pieces of straight route with a right angle.

(computable in pieces)



Item specifications LVE made up of M-PVC-P

Tactile surface with equidistant trapezoidal reliefs “olivella” finished mm 2x1. The reliefs’ height is not less than 3mm, the width as on the Chart3 – WT6 in CEN/TS15209, distance between reliefs as in the Chart1 S9 of CEN/TS15209. It is made of M-PVC-P and integrated with TAG-RFG 134.2 Khz. It can be used to make smart paths with below technical specifications:

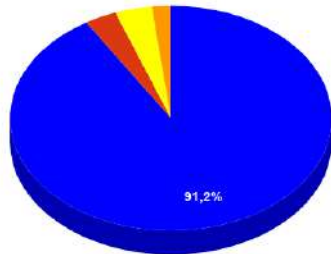
DESCRIPTION	UM	VALUE	TESTING METHOD		AVAILABLE COLOURS	VALUE LRV
Friction coefficient	μ	> 0,40	B.C.R.A. method			
IRemaining track	mm	0,1	EN433		YELLOW 3F9	37
Wheelchair	-	suitable	EN425		YELLOW 3FA	70
Electrical insulation	ohm	1010	DIN 51953		WHITE 232B	83
Resistance to chemical product	-	suitable	DIN 51958		GREY 1B82	23
Resistance to fire	-	B-fl/s1	UNI EN 13501-1		RED BC3	10
Hardness	Shore A	94 +/- 2	ISO 868		CHARCOAL 1B68	8
Xenon arc aging test (with anti-UV)	h	> 300	UNI EN ISO 4892-2		OTHER COLORS ON REQUEST	
Heat insulation	W/mk	0,12	DIN 52612			
Specific weight	gr/cm ³	1,24+/- 0,02	ISO 1183			
Failing load (after 168h at 100 °C) °C)	N/mm ²	19	CEI 20-34			
Stretch (after 168h at 100 °C)	%	305	CEI 20-34		OTHER COLORS ON REQUEST	
Thermal stability	min	35	CEI 20-34			
Twisting stability	°C	-20	ASTM D 104			
Slipperes test	-	R 11	DIN 51130			

What do users think about the innovation

The Tactile Ground Surface Indicators (TGSi) is made up of modular elements equipped with grooves, whose shape, spacing, height and radius of the reliefs are specifically projected.

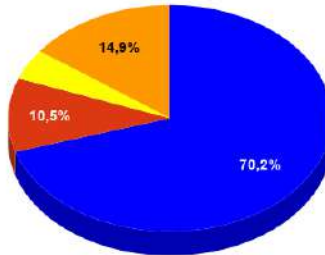
It allows blind or partially-sighted people to reach the destination through the scan of a tactile map, if present, the feet-sense-of-touch and the manual feedback (the white cane) or even, for partially-sighted persons, the chromatic contrast. **The process of orientation that these tools can provide is then structured in different stages: maps reading, information memorization, guiding path.**

Do you think is useful the vocalization of a tactile route?



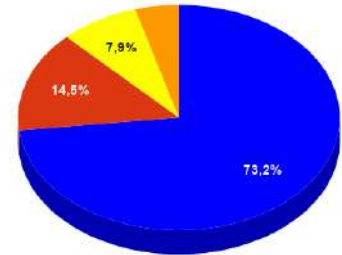
● Yes ● No ● If no, why not ● No answer

If you could choose would you like that the voice message was sent from the:



● Headset ● External mini speakers ● Mobile phone hands free
● No answer

Do you believe that the LVE system meets the needs of blind and partially sighted most of the current system?



● Yes ● No ● If no, why not ● No answer

The LVE System makes the knowledge procedure of the environment and the orientation PRECISE and IMMEDIATE thanks to the RFG (Radio Frequency Ground) technology that, if integrated with the plantar-tactile system, gives vocal information in the right point of contact between a specific hardware and the pavement implemented with RFG detectors.

Installation with glue

The glue to be used is a polyurethane adhesive made up of two elements with high tenacity and low viscosity: Component A (polymer polyurethane) and Component B (hardner).

The components need to be carefully mixed together to get a paste, that can easily be affixed with a trowel, a roller or a squeegee. The base must be evenly dry, sound, free from dust or removable parts, without cracks, paint, wax, oil, rust and anything else that may affect the adherence. Tiles must be got out from their packaging a few hours before installation and laid down: they need to acclimatize and loose the internal stress.

The glue must be carefully manipulate and mixed from the center outwards. Pay attention to mix also the side parts and to let bubbles come out.

Tiles are to be laid in order to assure a good coplanarity. They should be fixed on existing pavement, there is no need to remove or polish it. Tiles are quite thin, then you are not needed to glue them on a screed, as needed for other kind of pavement.

In case tiles have planarity defects, it is needed to put sand sack or something heavy on deformed section and maintain them until the glue is hardened.

Warning: don't use on surfaces where humidity can easily return, on wet surfaces or on not-dry asphalt (wait 30 days at least), on bituminous surfaces where oil could easily exude.



Installation with double sided tape

A polyester film heavily coated on both sides with acrylic glue could be used to fix the product both on smooth or even on irregular surfaces.

To obtain the expected outcome, installation surfaces must be clean, dry and solid. To clean the surfaces before the installation, solvent like isopropyl alcohol mixed with water or heptane is to be used. When using those solvents pay attention to instruction and warnings on the label.

The endurance would be much stronger, if a hard pressure is used after the tiles have been laid. The fixing is at 50% after 20 minutes, 90% after 24 hours and is complete after 72 hours. Sometimes it could be useful to use warm air (ex: 70° for 1 hour) to obtain a better impermeability.

Caution: products must be kept in their package at maximum 23°C and with no more than 50% humidity.





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