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ENVIRONMENTAL PRODUCT DECLARATION

MPGO! Evolution

A SOLID COMPROMISE

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ECOEFICIENCY, a global aim.

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The Environmental Declaration has made following the requirements and recommendations of the reference document "Environmental Product Declarations (EPDs) following the international EPD system, published for Environdec (www. environdec.com) and it´s based on the phases of the Life cycle of Product: Production of materials and components, Manufacture of the Lift, Distribution, Use and End of life of the Lift "MP 1310 GO!".

The study of environmental impact of Lift MPGO! It has been quantified by means of a Life cycle Assessments (LCA) of agreement to the ISO 14.040 and ISO14.044 and appears in the document of reference 2400_I110191, elaborated for ITA (Instituto Tecnológico de Aragón*).

The impact characterization method used for converting the data from the life cycle inventory analysis into the impact categories is CML 2001.

The information about the materials and the manufacture of the lift has obtained directly from the Systems of MP's Elevators.

Ecoinvent v2.2 Database has been used for all processes and basic materials with exception of some materials define with forefront data as there were not available in Ecoinvent.

ita
INSTITUTO TECNOLOGICO DE ARAGON

*The Instituto Tecnológico de Aragón is a non-profit Technology Centre whose main objective is to promote competitiveness in the industrial sector and to support the growth of business sectors by means of the development, acquisition, adaptation, transfer and diffusion of innovative technologies in a multi-agent collaborative framework, especially with companies.

ITA has large experience in developing Life Cycle Assessments of goods and industrial products as a high value service for its clients.

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SISTEM BOUNDARIES

For lift production, the impact of procuring the materials, the related processes, handling of the waste involved in the lift and the auxiliary materials were considered as well as processes required for the production and transport of the various components to MP Headquarters in Utebo (Zaragoza).

To evaluate the impact associated with the distribution Phase, it has been selected an average distance of 2.000 km. (distance established as European average).

For the impact during the use phase, the energy consumption has been considered according to the last version of the electric mix in Spain grid published by the Ministry for Industry, relating to 2009, and the spare parts materials for predictive maintenance over the 30 years of service life of the lift.

For the End of Live Phase, it has been considered the impact of the disposition of the components of lift in the dump.

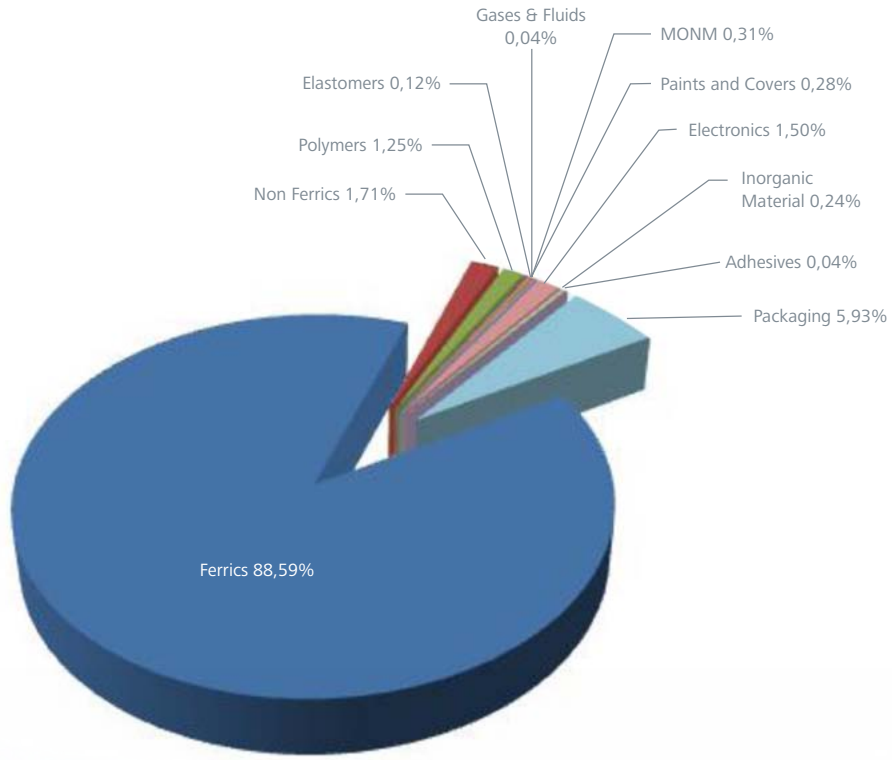
The potential advantage of the recycling and recovery of various lift´s components is not included for the environmental impact.

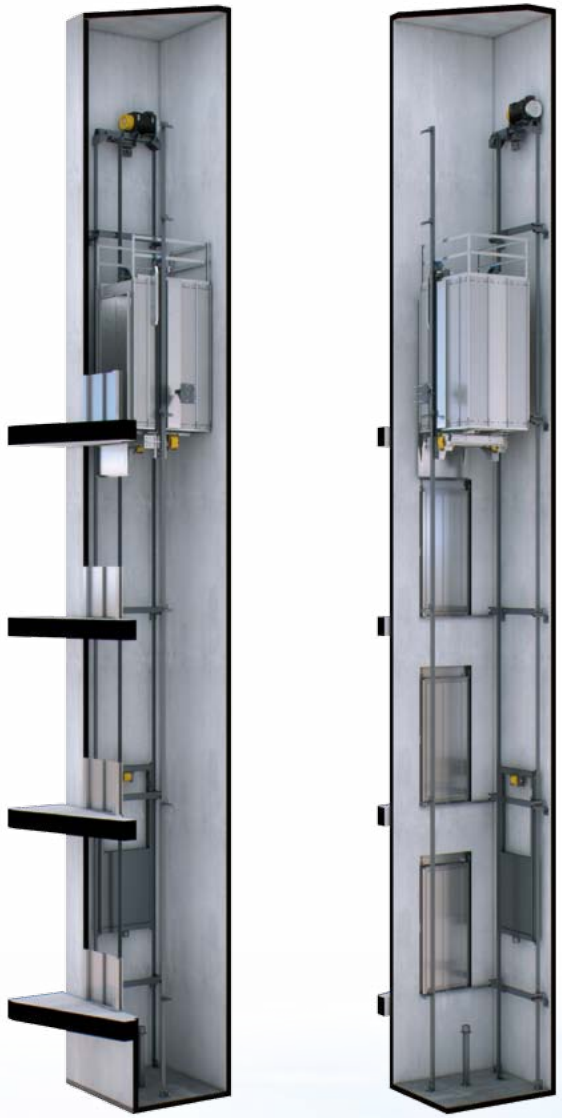
FUNCTIONAL UNIT

1 passenger travelling 1 floor.

LIST OF MATERIALS

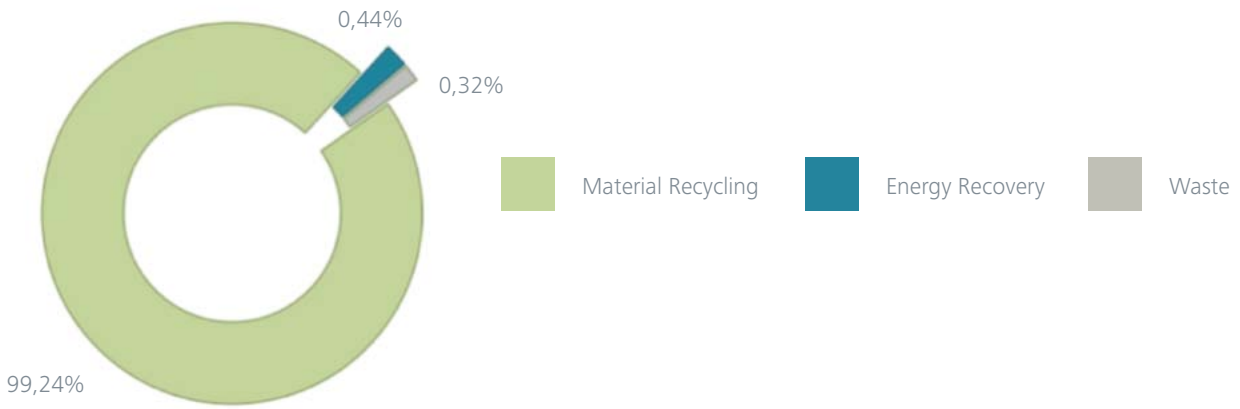
Following graphs shows distribution of materials which the MPGO! is made of.





POTENTIAL RECOVERABILITY AND RECYCLABILITY PROFILE

Ferrous, Non Ferrous metals and Packaging materials, reaches almost 95% of total weight of lift, this entails high levels of recycling in MPGO!



ENERGY CONSUMPTION

The Energy consumption / 1 years [kWh]									
USAGE CATEGORY 1		USAGE CATEGORY 2		USAGE CATEGORY 3		USAGE CATEGORY 4		USAGE CATEGORY 5	
TOTAL		TOTAL		TOTAL		TOTAL		TOTAL	
173,6 kWh		350,3 kWh		939,3 kWh		1.822,7 kWh		3.589 kWh	
STAND BY	TRAVEL	STAND BY	TRAVEL	STAND BY	TRAVEL	STAND BY	TRAVEL	STAND BY	TRAVEL
55,3 kWh	118,3 kWh	54,6 kWh	295,7 kWh	52,3 kWh	887,0 kWh	48,8 kWh	1.773,9 kWh	41,9 kWh	3.547,8 kWh

The Energy consumption Total / 30 years [kWh]				
Usage Category (VDI 4707/Part 1)				
1	2	3	4	5
5.207,9	10.508,7	28.177,9	54.681,8	107.689,5

The Energy consumption / Passenger • Floor [Wh]				
Usage Category (VDI 4707/Part 1)				
1	2	3	4	5
0,152	0,123	0,110	0,107	0,105

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LIFT ENERGY EFFICIENCY
Certificate according to VDI 4707

THE TEST LABORATORY OF THE INSTITUTO TECNOLÓGICO DE ARAGÓN, according to the report issued on C/110935I1 code states: the electrical lift, 99/56780 number reference and MPGO model with Permanent-magnet Synchronous Gearless Machine type and with no regenerative system owed to MP has an energy efficiency class A for the usage category 3, according to VDI 4707 / Part 1, March 2009 "Lifts. Energy efficiency".

Nominal demand per year for nominal values as shown: 933,15 kWh

Manufacturer	MAC PUAR, S.A.
Location	Location Pol. Indusrtial El Águila. Autovía Logroño km 13,4. Naves 14-20 50180 Utebo (Zaragoza) - España
Lift model	Lift model Electrical MPGO, with no regenerative system
Reference number of product	99/56780
Lift type	Passenger lift
Nominal load	1000 kg
Nominal speed	1 m/s
Operating days per year	365
Standby demand: 6,37 W (energy demand class: A)	Specific travel demand: 0,45 mWh/(kgm) (energy demand class: A)

USAGE CATEGORY 3 ACCORDING TO VDI 4707
Comparision of energy efficiency classes is only possible under equal usage

Date: 25-03-2011

Reference: VDI 4707 Part 1 (issue 03-2009)

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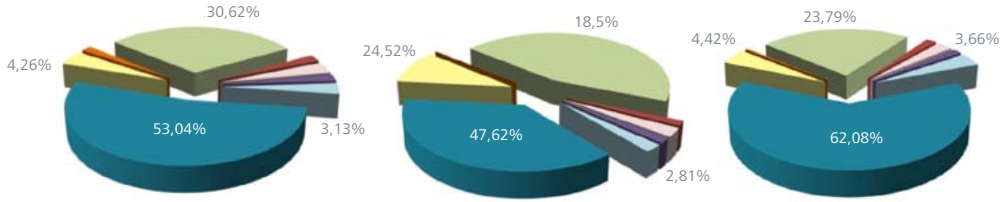
PRODUCT ENVIRONMENTAL PROFILE

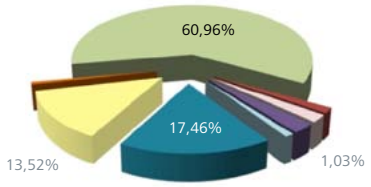
The table below shows the final results expressed in each of the established Impact Categories.



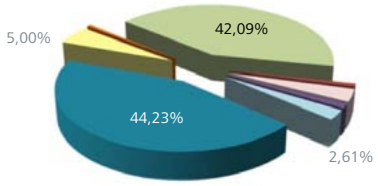
1.Global Warming Potential (GWP)
kg CO_2 Eq

2.Ozone Depletion Potential (ODP)
kg CFC-11 Eq

3.Acidification Potential (AP)
kg SO_2 Eq



4.Eutrophication Potential(EP)
kg PO_4 Eq



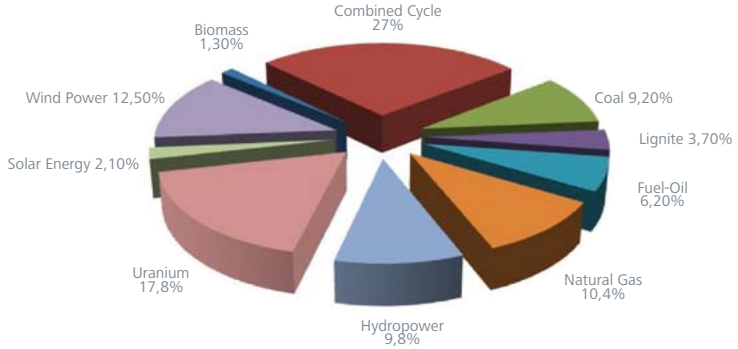
5.Photochemical Ozone Creation Potential (POCP)
kg C_2H_4 Eq

Materials | Manufacture | Use-Stand by | Maintenance
Purchase | Distribution | Use-Travel | End of life

	Global Warming Potential	Ozone Depletion Potential	Acidification Potential	Eutrophication Potential	Photochemical Ozone Creation Potential
	Kg CO_2-Eq	Kg CFC-11-Eq	Kg SO_2-Eq	Kg PO_4-Eq	Kg C_2H_4-Eq
MATERIALS	6.840,454	5,369E-04	35,539	25,761	3,472
PURCHASE	449,858	6,391E-05	2,434	0,647	0,073
MANUFACTURE	750,981	7,510E-05	3,675	0,895	0,280
DISTRIBUTION	429,771	3,025E-05	2,309	1,135	0,097
USE-STAND BY	698,855	8,153E-05	5,469	0,435	0,215
USE-TRAVEL	11.848,726	1,382E-03	92,729	7,380	3,649
MAINTENANCE	951,619	7,118E-04	6,608	5,715	0,413
END OF LIFE	370,105	2,068E-05	0,613	0,292	0,050
TOTAL	22.340,370	2,902E-03	149,375	42,260	8,248

Representative dates with Usage Category 3

OFFICIAL PRODUCTION MIX in Spain 2009 (Source: Ministry of Industry - Energy Report 2009)



DEFINITIONS

1.Global Warming Potential (GWP).

Phenomenon by which the infrared rays emitted by the earth's surface are absorbed by the molecules in the atmosphere as a result of solar warming and then re-emitted in the form of heat, thus giving rise to a process of global warming of the atmosphere. The indicator used for this purpose is GWP (Global Warming Potential). This mainly includes the emissions of carbon dioxide, the main greenhouse gas, as well as other gases with a lower degree of absorption of infrared rays, such as ethane (CH4), nitrogen protoxide (N2O), chlorofluorocarbons (CFC), which are expressed according to the degree of absorption of CO2 (kg CO2). HVAC. Heating, Ventilating, and Air Conditioning MLA. Metro Leggera Automatica (Automatic Light Metro).

2.Ozone Depletion Potential (ODP).

Degradation and depletion of the ozone layer in the stratosphere, which has the property of blocking the ultraviolet components of sunlight thanks to its particularly reactive compounds, originated by chlorofluorocarbons (CFC) or by chlorofluoromethanes (CFM).
The substance used as a point of reference for assessing the ODP (Ozone Depletion Potential) is trichlorofluoromethane, or CFC-11.

3.Acidification Potential (AP).

Phenomenon by which atmospheric rainfall has a pH which is lower than average. This may cause damage in forests and cultivated fields, as well as in water ecosystems and objects in general. This phenomenon is due to the emissions of SO2, of OX, and NH3, which are included in the Acidification Potential (AP) index expressed in masses of SO2 produced.

4.Eutrophication Potential (EP).

Enrichment of the watercourses by the addition of nutrients. This causes imbalance in water ecosystems due to the overdevelopment I encouraged y the excessive presence of nourishing substances. In particular, the Eutrophication Potential (EP) includes phosphorous and nitrogen salts and it is expressed in grams of oxygen (kg O2).

5.Photochemical Ozone Creation Potential (POCP).

Production of compounds which by the action of light are capable of encouraging an oxidizing reaction leading to the production of ozone in the troposphere. The indicator POCP (Photochemical Ozone Creation Potential) includes especially VOC (volatile organic compounds) and is expressed in grams of ethylene (kg C2H4).

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At MP we have been offering efficient and innovative solutions for the lift sector and professionals for 30 years.

We manufacture lifts, escalators, moving walks and lift components which are widely used all over the world.

Out lifts are present on the five continents, in more than 80 countries.
Following our motto, **"we adapt to your space, naturally"**, MP offers ecoefficient solutions, adapted to the requirements of our customers and to international regulations, **optimising the use of energy resources with the utmost respect for the Environment.**

Our philosophy: The constant search for excellence and adaptability in its broadest sense.

On this basis, we have developed a range of products aimed at satisfying the needs of any project requiring the vertical or horizontal transport of people or goods, and offer the optimum solution for each project.

Lifts for any type of building or passenger, escalators and moving walks, lifting platforms, and the most extensive range of lift components.

At MP we work to provide innovative, flexible and sustainable solutions for the world of elevation.

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