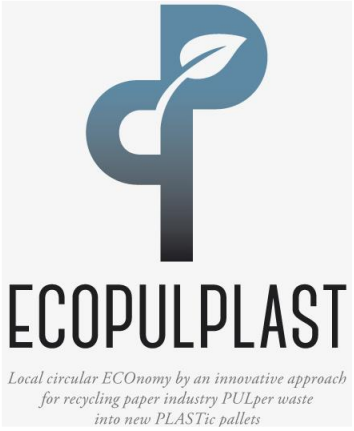

Project Number: LIFE14 ENV/IT/001050 – LIFE ECO-PULPLAST

PREPARATION OF DEMONSTRATION SITE REPORT

Document Control Record

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Document responsible	SELENE
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Contributions	SELENE, LUCENSE

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1. Introduction and scope of deliverable D04

The preparation of the demonstration site is a fundamental action to be able to start with the demonstration phase, as currently there are no dedicated sites and processing lines for the recycling of pulper waste.

In this deliverable, it is described how the site was prepared from the technical point of view, illustrating the preparatory activities for the set-up of the demonstration site.

The prototype line was indeed installed at SELENE production site. The building, its external area and technological installation were already in fully working conditions, but technical adjustments – mainly electrical installations, water supply, compressed air, etc. - were necessary in accordance to the specific needs of the prototype line, before the installation of the machineries.

Indicator of success for this action is to have demonstration site facilities fully functional.

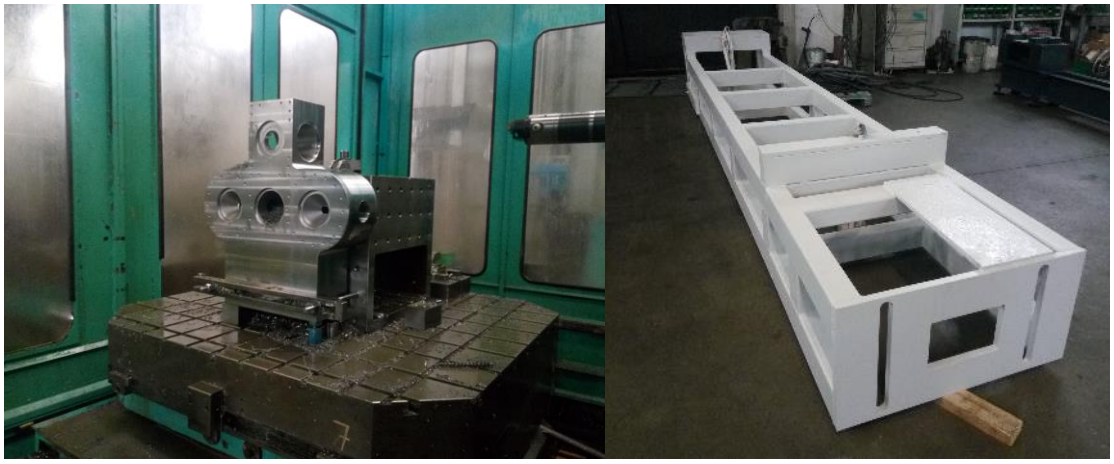
2. Action B1: Preparation of demonstration site

The preparation of the demonstration site described in this Deliverable includes the construction, installation and pre-tests of the prototype injection moulding and pallet moulds, transport of the machineries to the demonstration site in Selene and the preparation of the demonstration site in Selene.

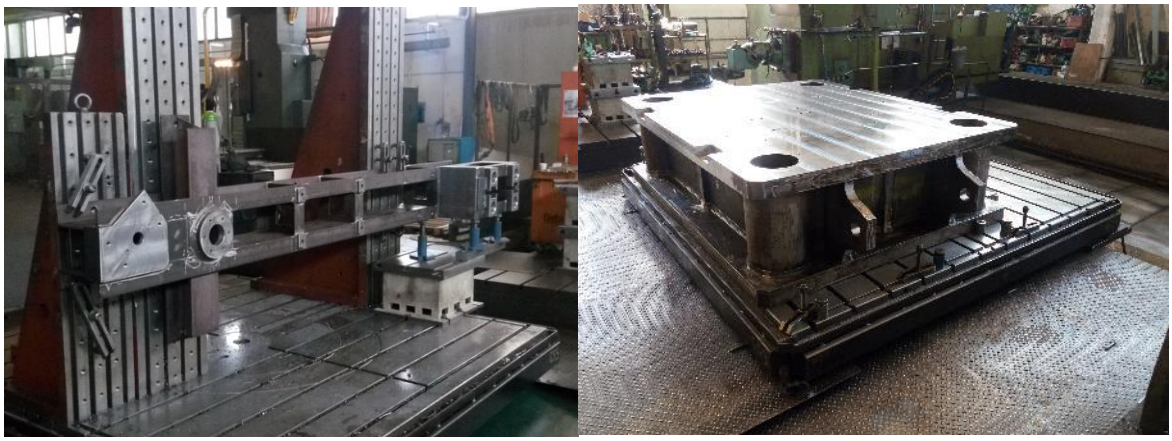
Construction and assembly of the prototype injection moulding

The construction of the prototype line started in August 2016. The supplier Intec built many mechanical components of the final machineries. Other components were built by Intec's suppliers, provided as semi-finish products and assembled by Intec at their plant.

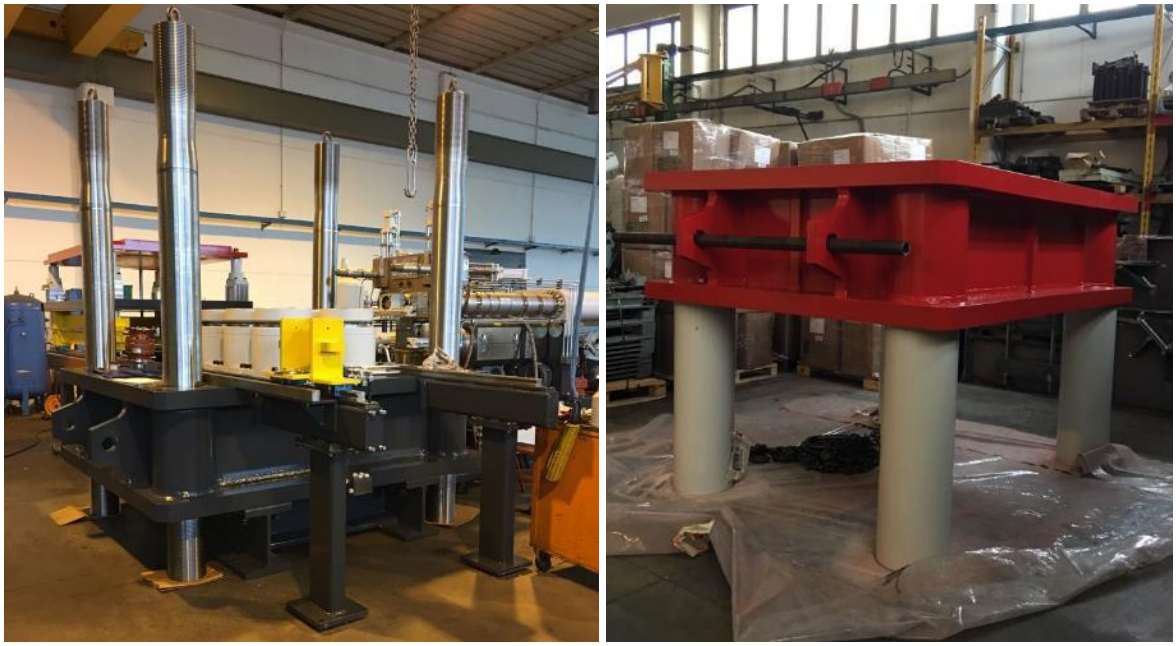
Hereafter we report photographs of the construction phases of the different modules. The prototype line also includes a machine software control, which is not described here.



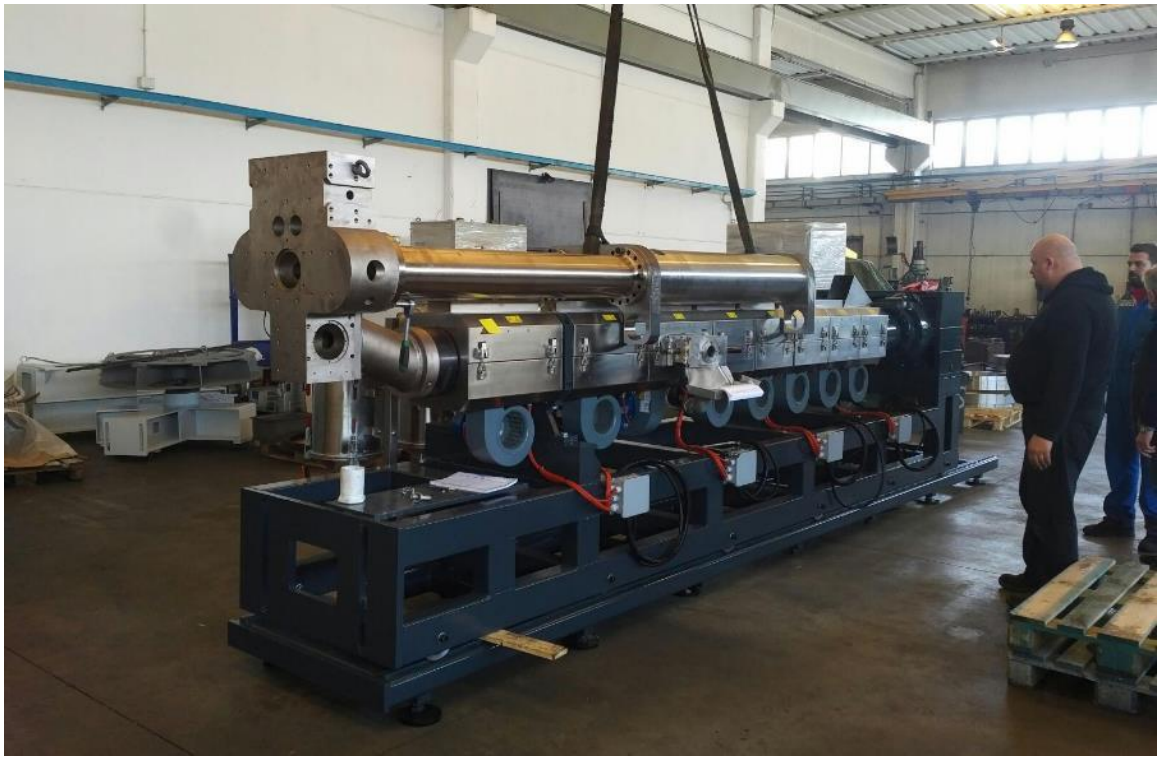
Left: injection unit during manufacturing; right: support of the injection unit.



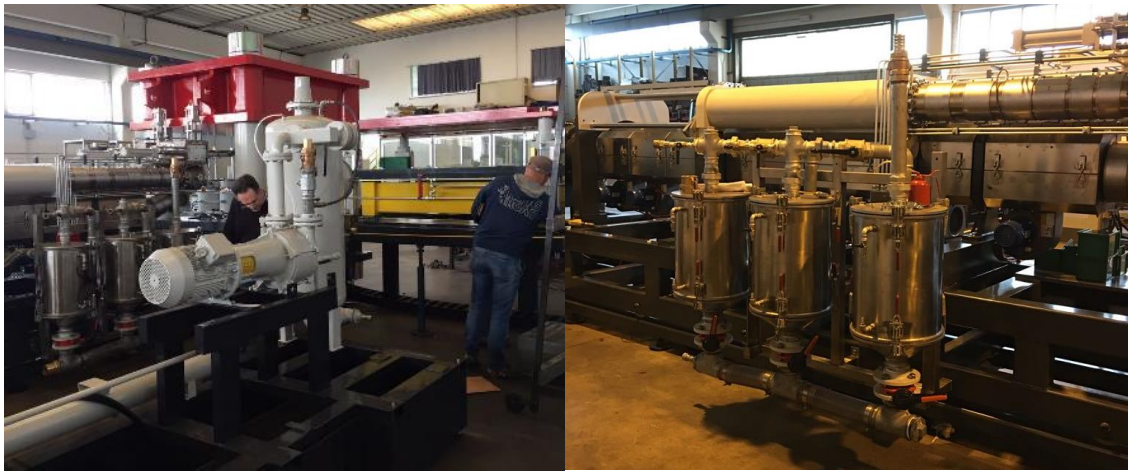
Left: Press support; right: press, lower part.



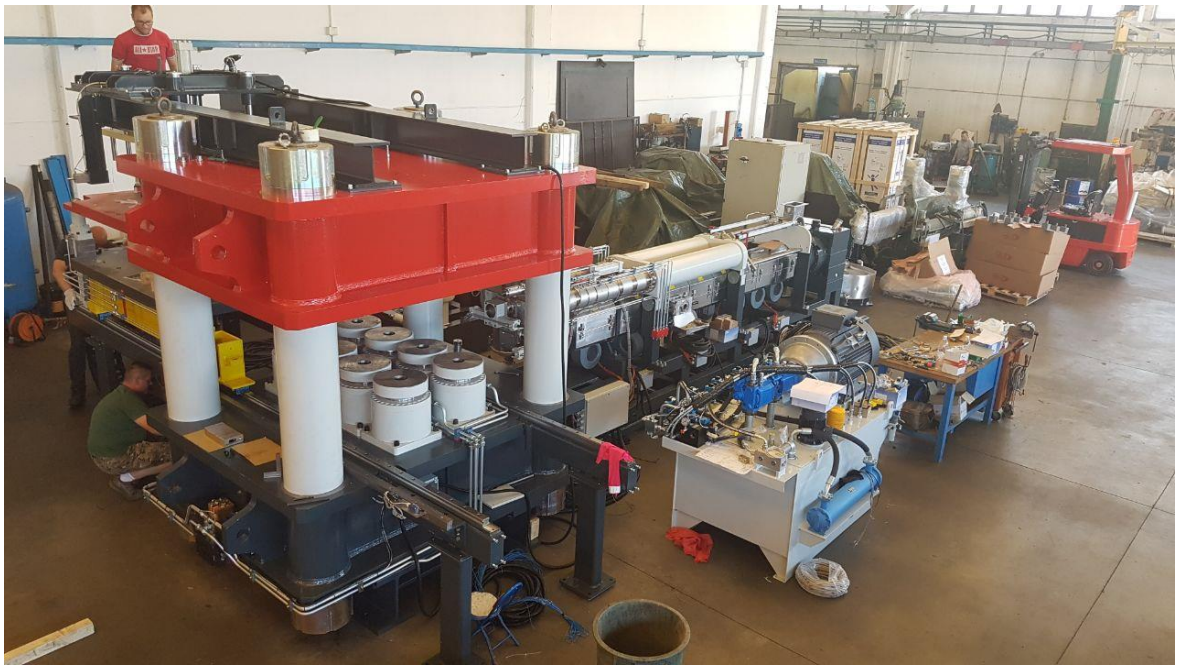
Left: Spacers and pistons installed on lower press; right: upper press.



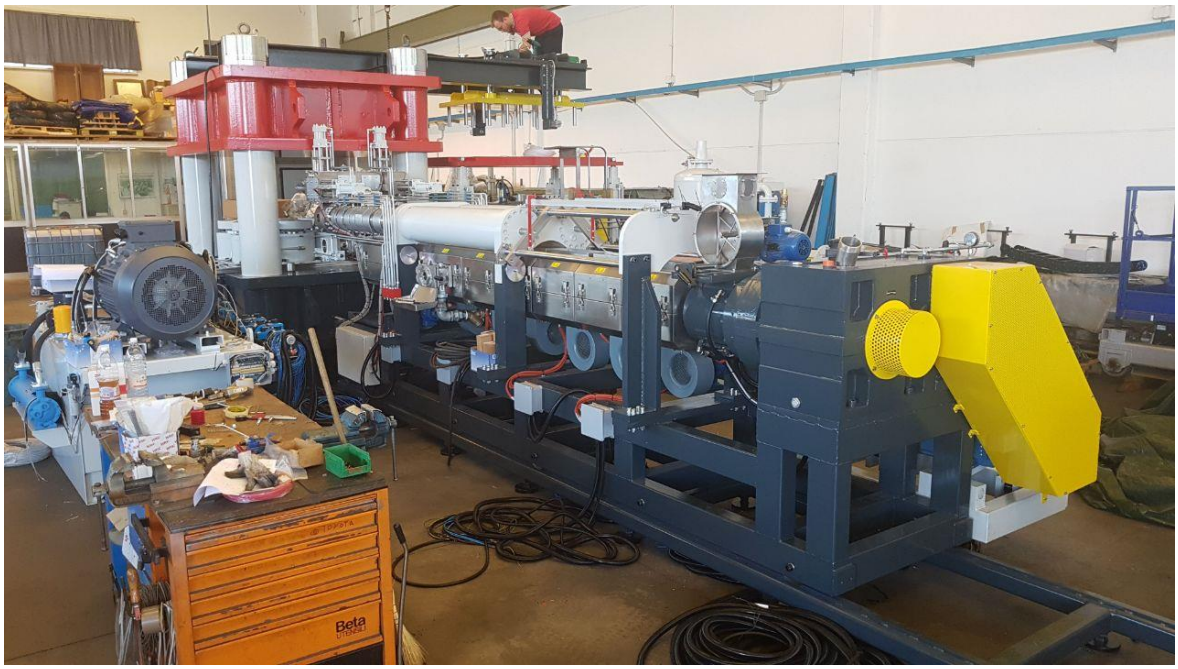
Installation of Injection unit on support.



Left: Vacuum pump; right: degassing system.



Assembling of the press holder and overview of the complete machine

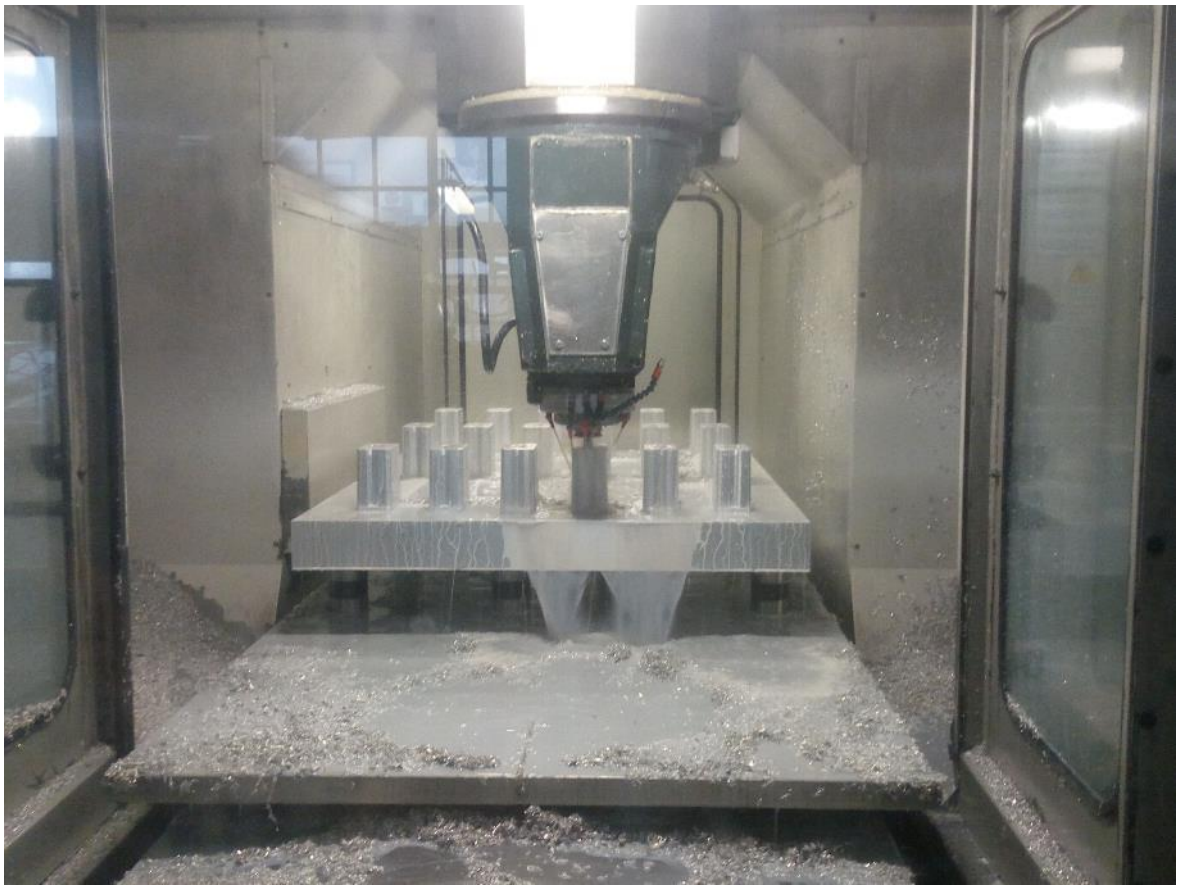


Assembling of the press holder and overview of the complete machine

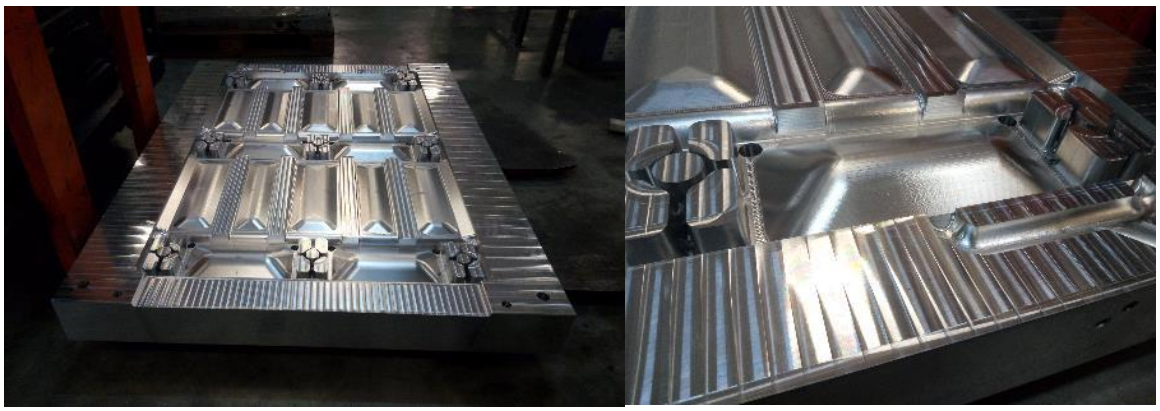
Construction and pre-tests of pallet moulds

Pallet moulds were manufactured in aluminium at the mould supplier by high precision numerical control machines. The plastic euro-pallet (1200x800 mm2) is made of four different parts: one mould for the board and a second mould for blocks and chamfers.

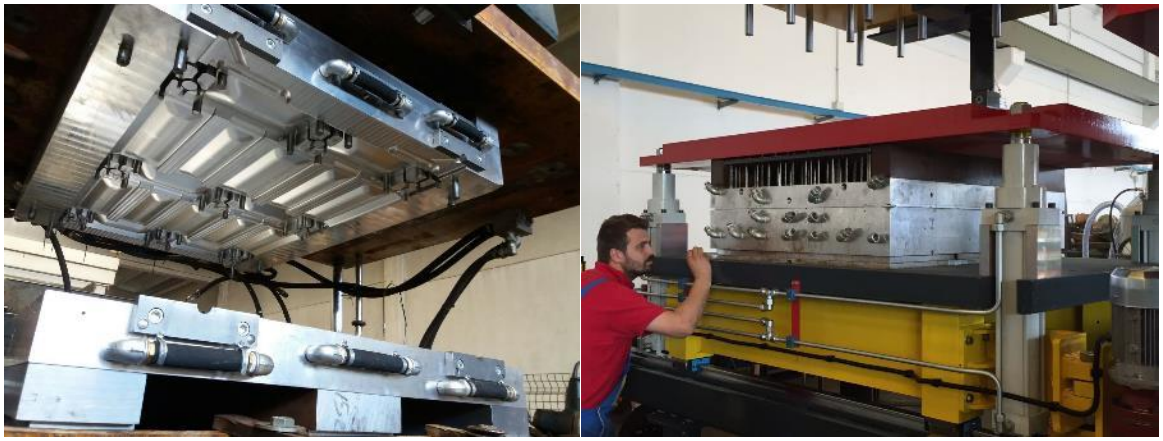
The mould manufacturing was completed in March 2017 and pre-tested on 29-31 March and then again on 11-12 April at Agricow, with small adjustments required to perform correctly during the injection, sealing, filling, opening and pallet removal.



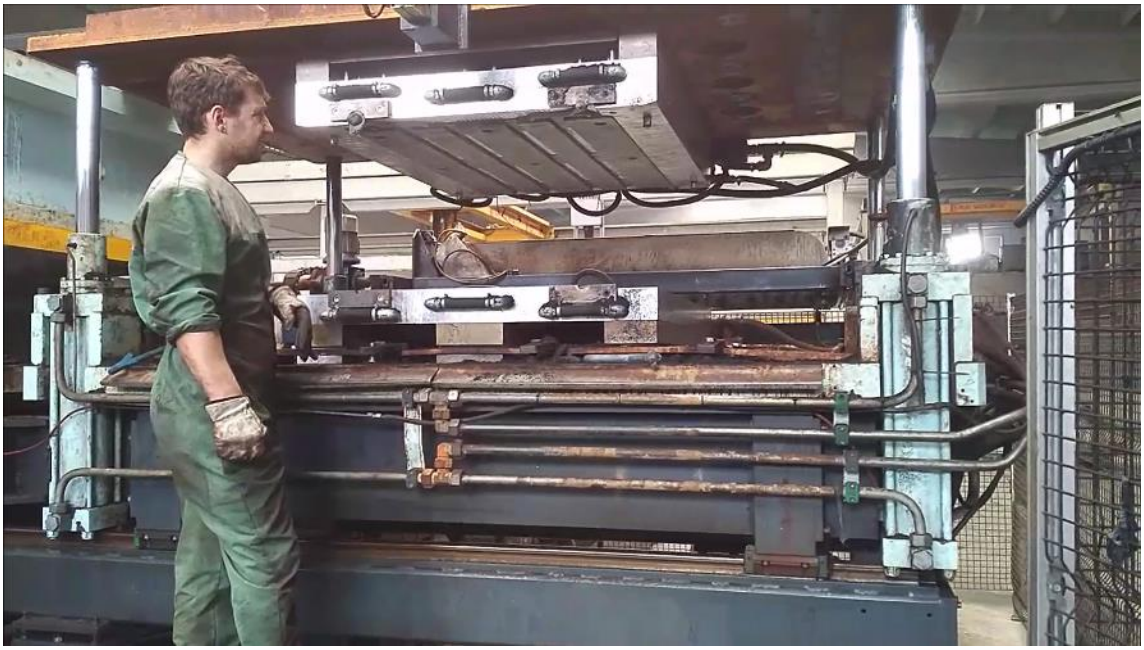
Numerical control machine during mould manufacturing



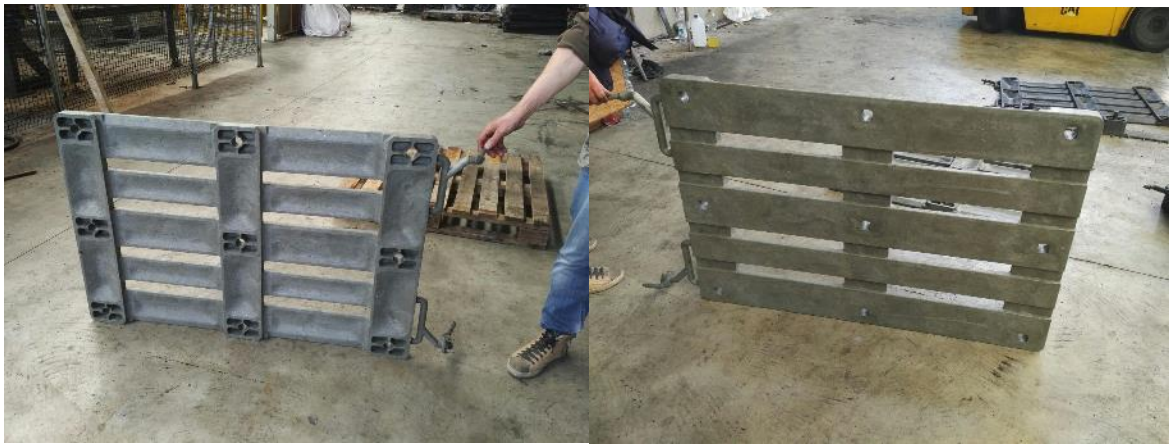
Aluminium mould of plastic euro-pallet



Moulds assembled on press for pre-tests at supplier



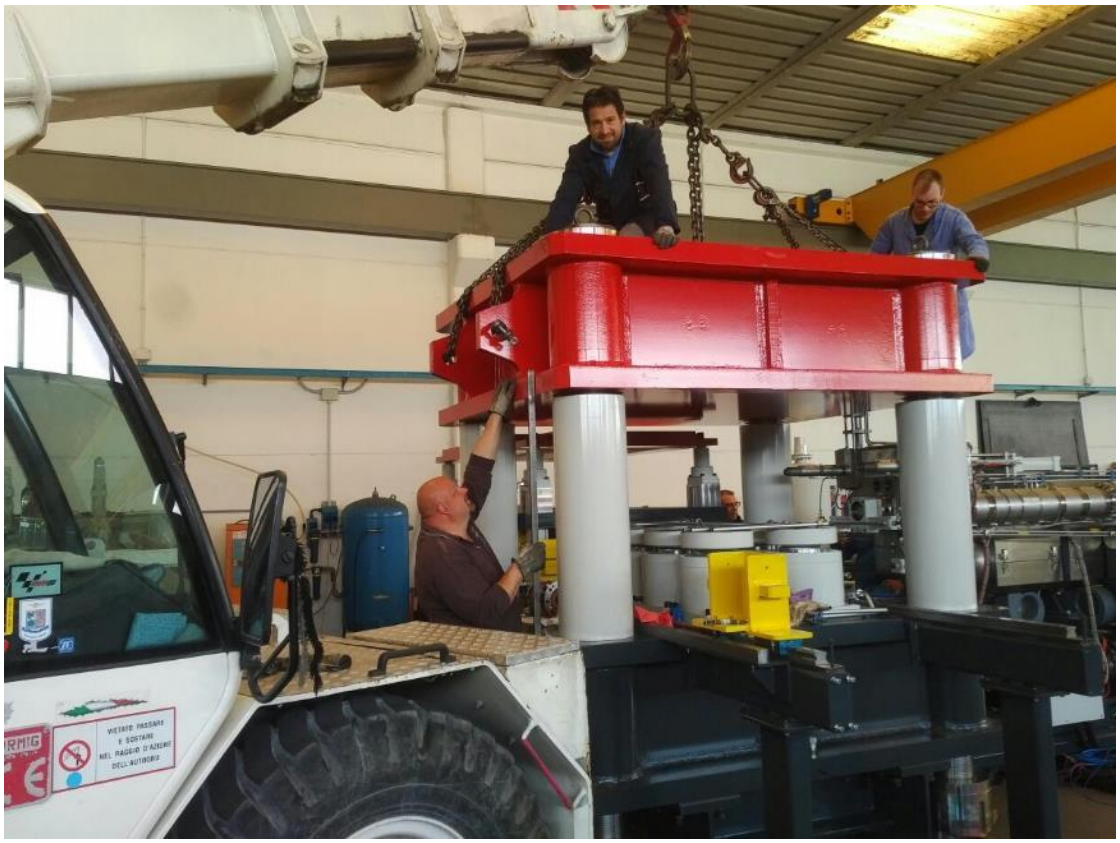
Pre-tests of pallet moulds at supplier



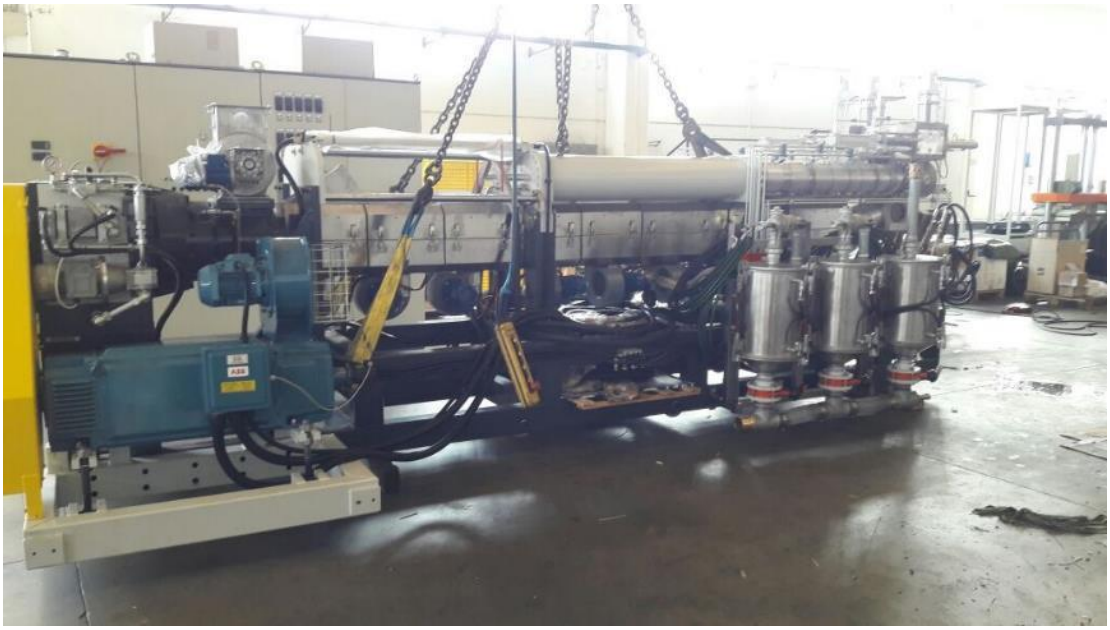
First board moulded during pre-tests at supplier: front and rear view

Transport of the machineries to the demonstration site

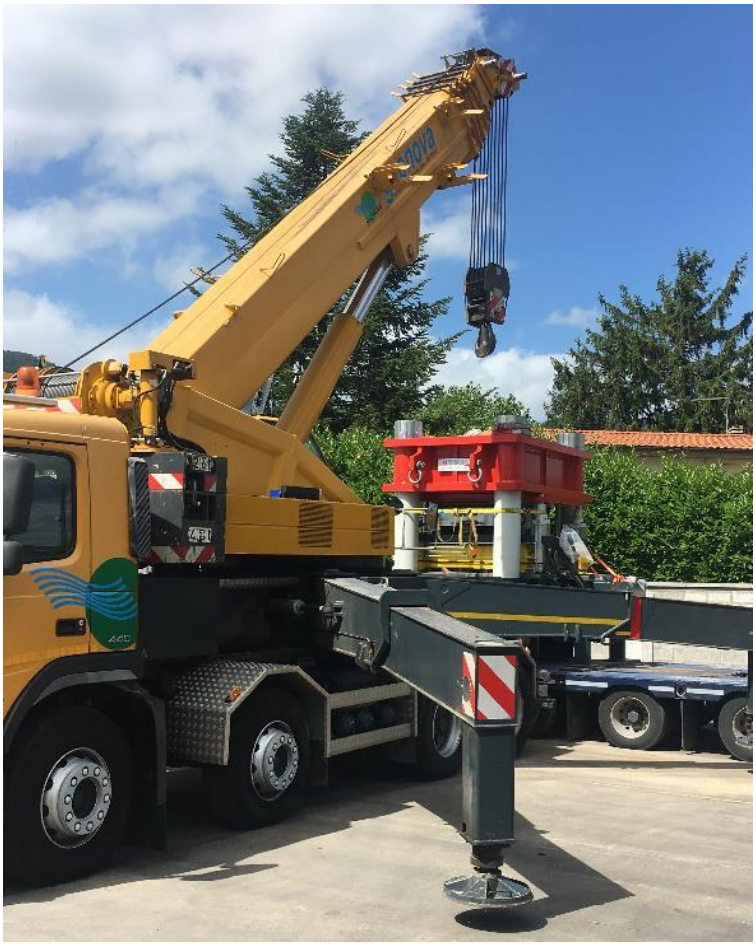
Transport of the machineries required oversize load with a lowered floor and two additional trucks with a loading capacity of 30 tons. The weight of the press alone is 9 tons, while the injection moulding units is 4 tons heavy.



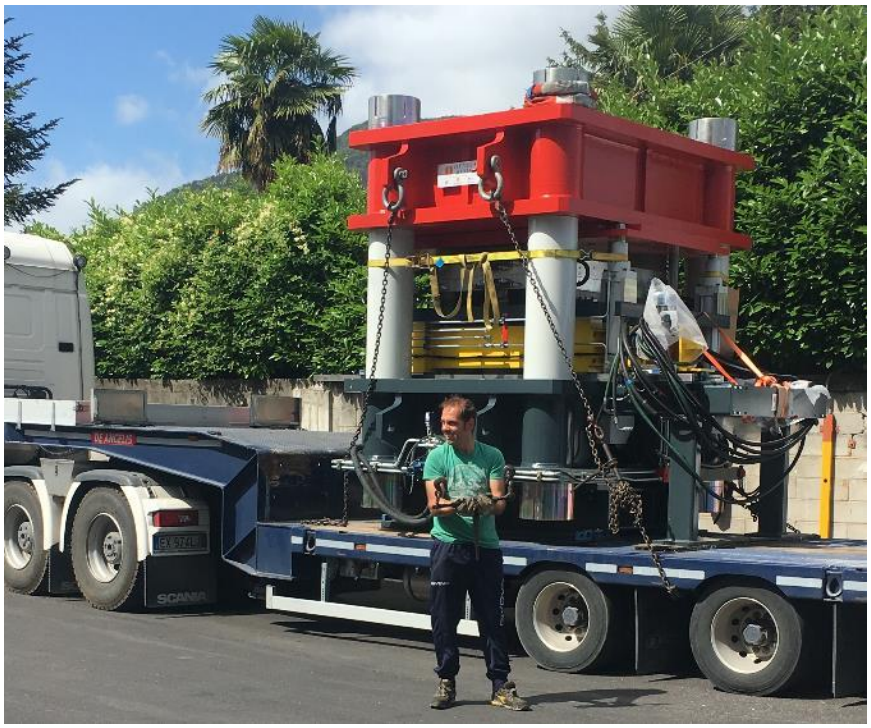
Press disassembly and loading at supplier



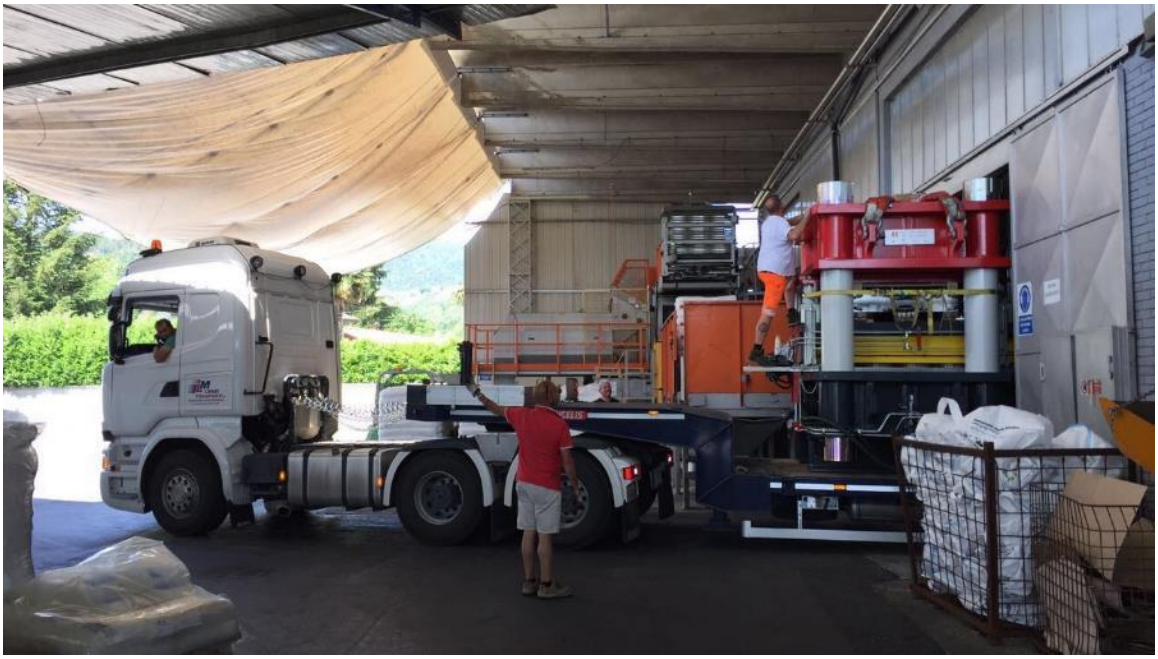
Injection unit loading at supplier



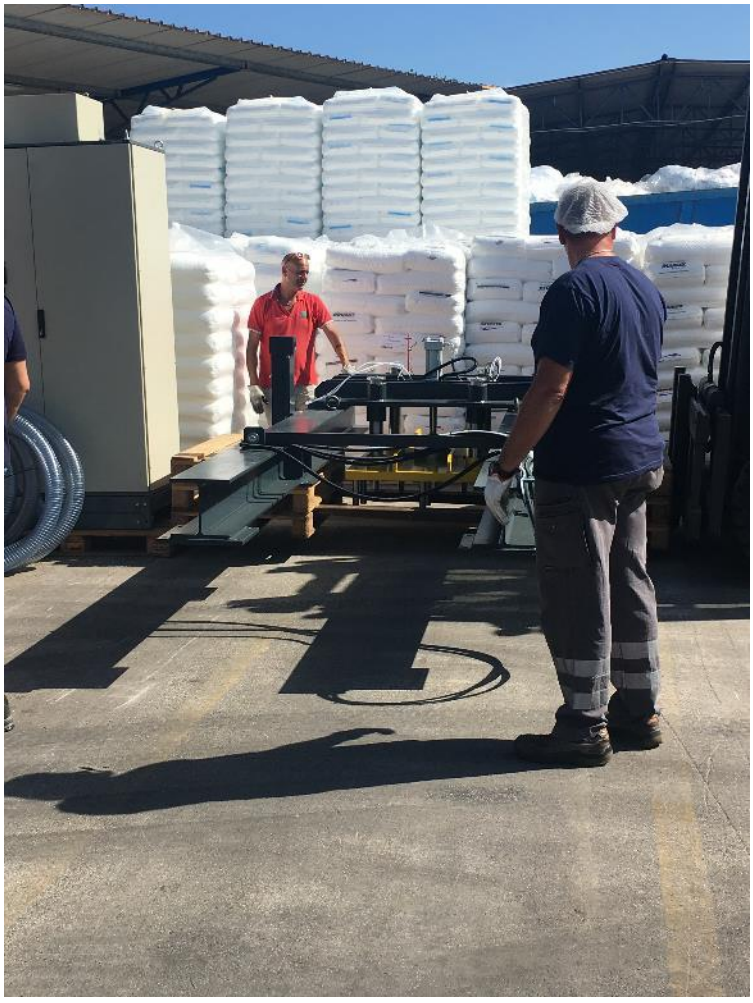
Press loaded on the truck



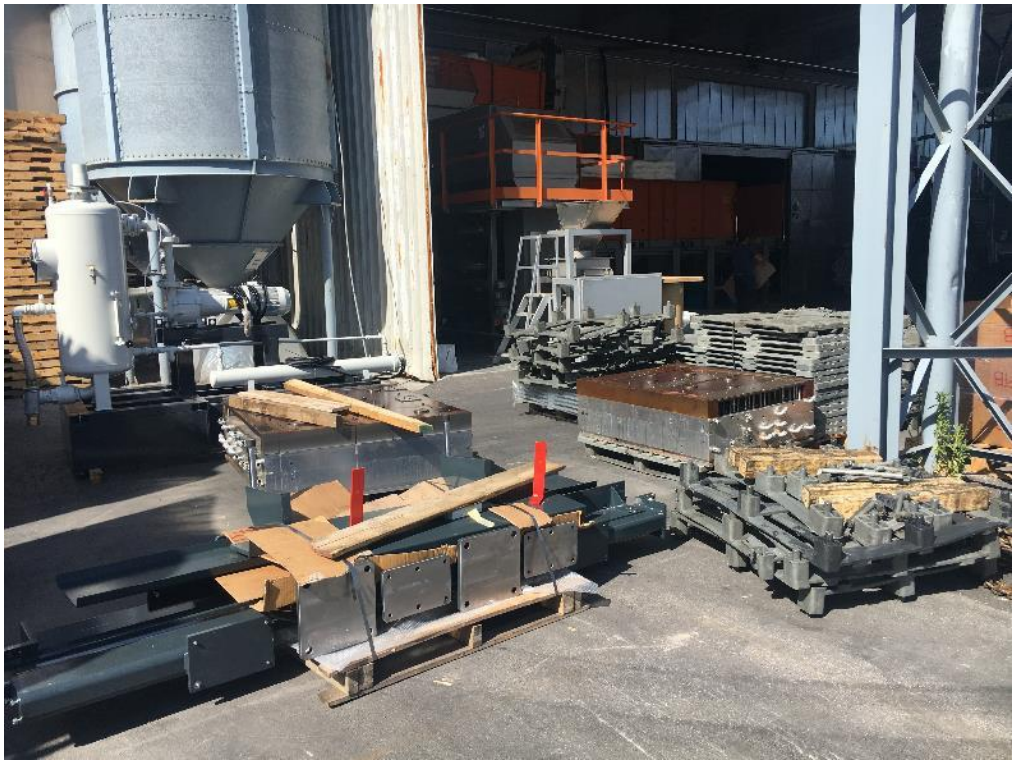
Press loaded on the truck, ready to be transported



Arrival at the demonstration site in Selene



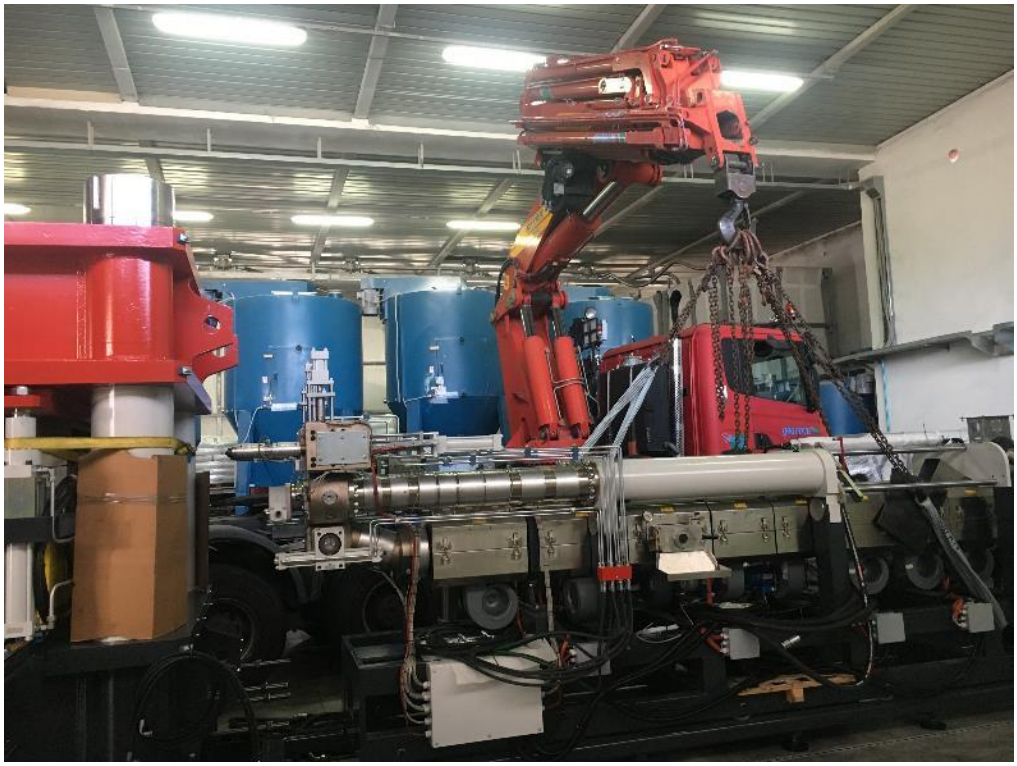
Materials and components unloaded at Selene



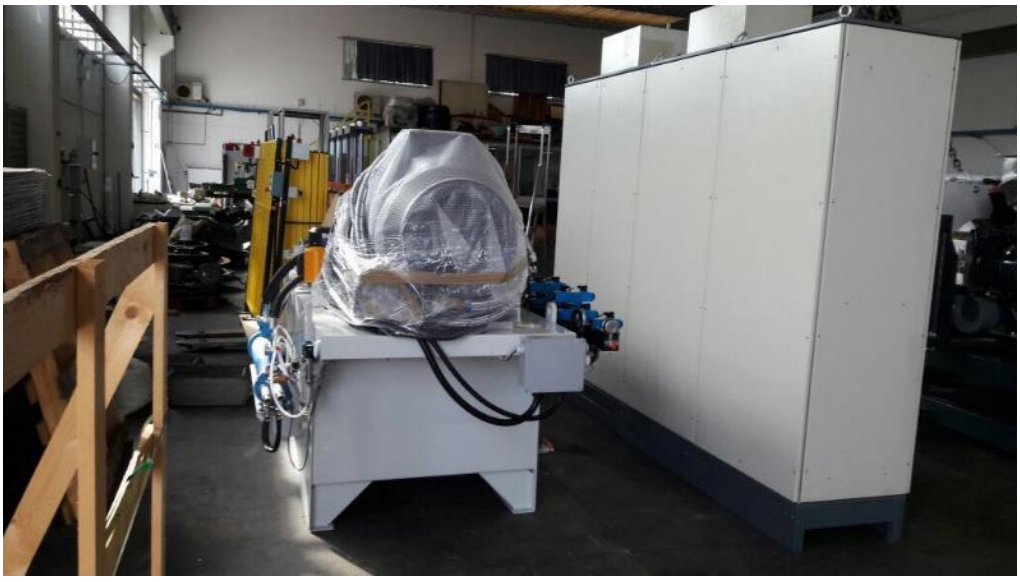
Materials and components unloaded at Selene

Installation of prototype line in Selene

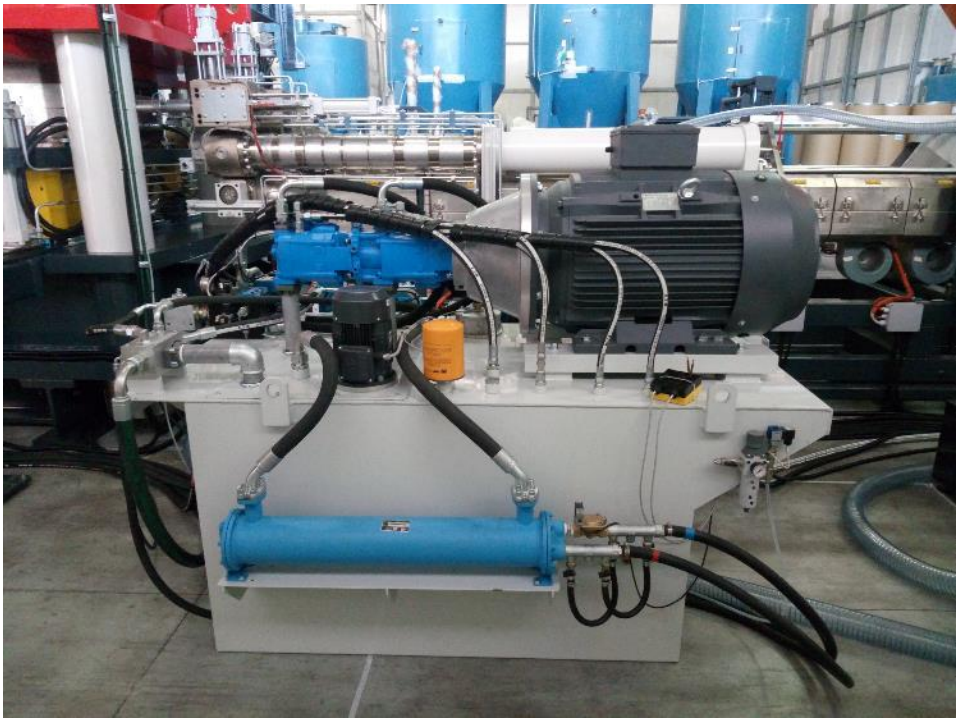
Following the transportation, the prototype line was installed in Selene. The most crucial steps were the installation of the injection unit and the press, which were released on reinforced blocks and required high precision. Afterwards, the shredder, mixer and CAG densifier were also installed, together with the other units, such as vacuum pump, hydraulic unit, control panel, electric panel, conveyor belts, etc.



Installation of the injection unit at the demonstration site



Installation of the injection unit at the demonstration site



Installation of the hydraulic unit at the demonstration site

Press and mould holder installed at the demonstration site

Preparation of demonstration site in Selene

The preparation of demonstration site, in order to install the prototype line, is an activity of upmost important. The activity was carried out mostly by Selene personnel, together with the technicians of the machineries suppliers, following the steps reported hereby:

• ELECTRIC CIRCUITS: power supply line (switch 630A)

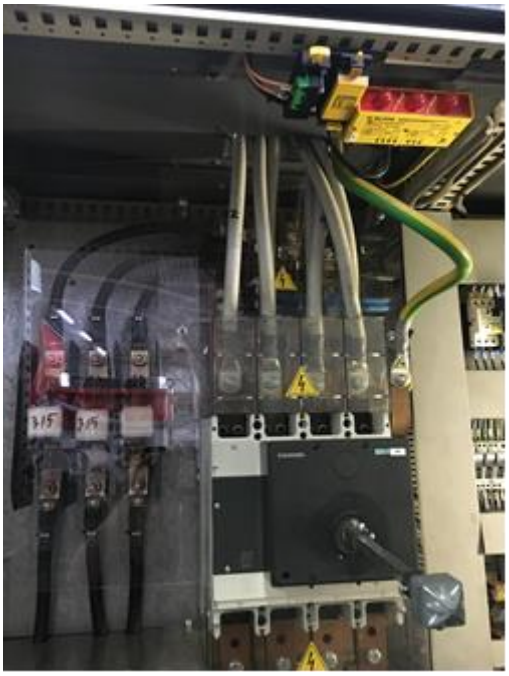
• ELECTRICAL CONNECTORS: connectors for various devices (press, shredder, KAG dryer, conveyor belt)

• REFRIGERATION WATER: connection from our INTEC INTRO REFRIGERATED WATER ring

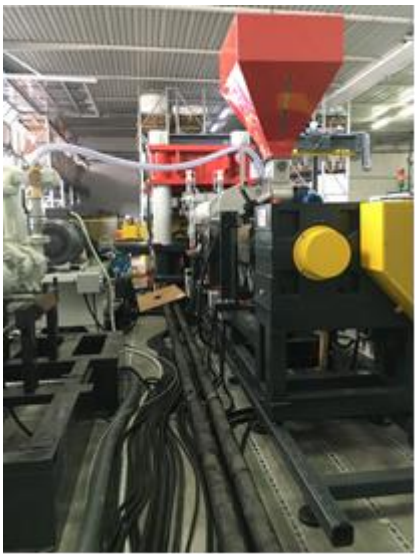
• Mechanical protections around raw material loading area (SELENE)

Installation of electrical system (cables in the canal conduit).

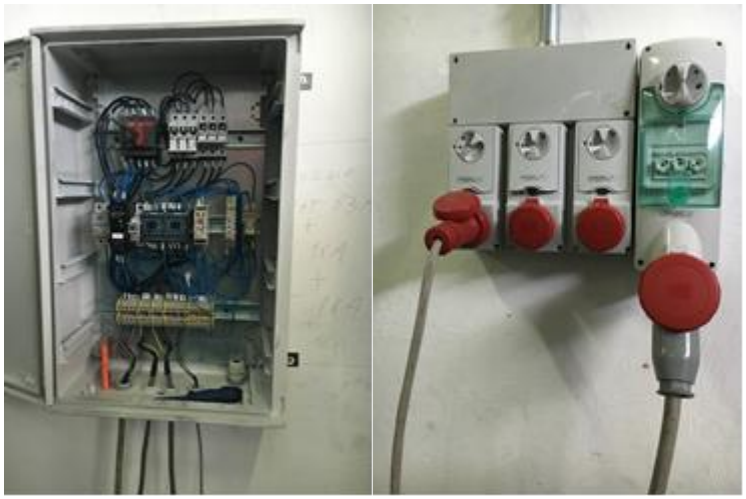
Cables connected in the electric panel



Cables from the electric panel to the injection moulding line



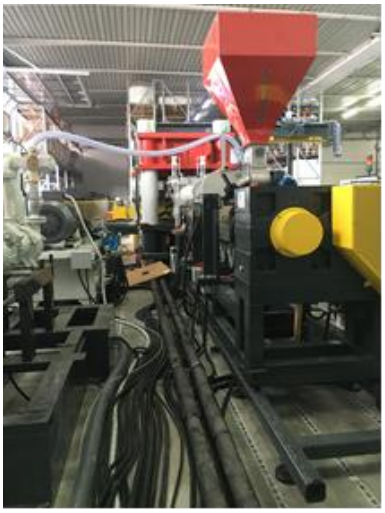
A small, specific electric panel was set up for feeding the conveyor belt / kag and mixer (motors, fan, etc.)



Power Supply CMG Shredder (Canal conduit)

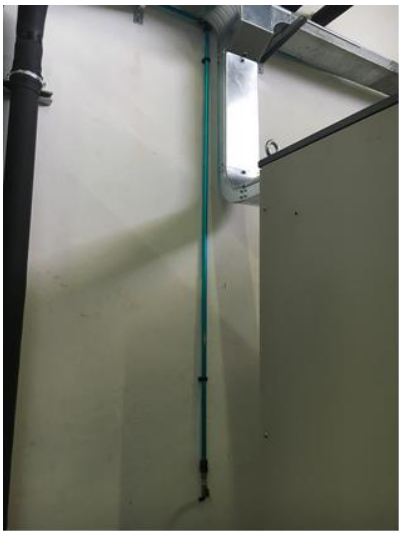
Refrigeration water system (large black pipes)

Water cables connection to the injection moulding line

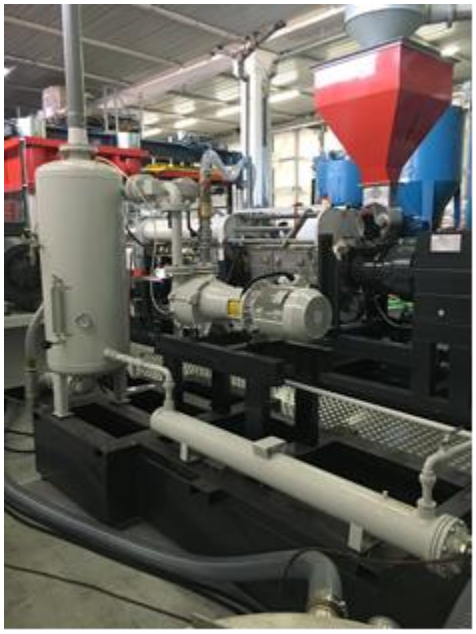


Gangway to cover electric and water cables going to the injection moulding line

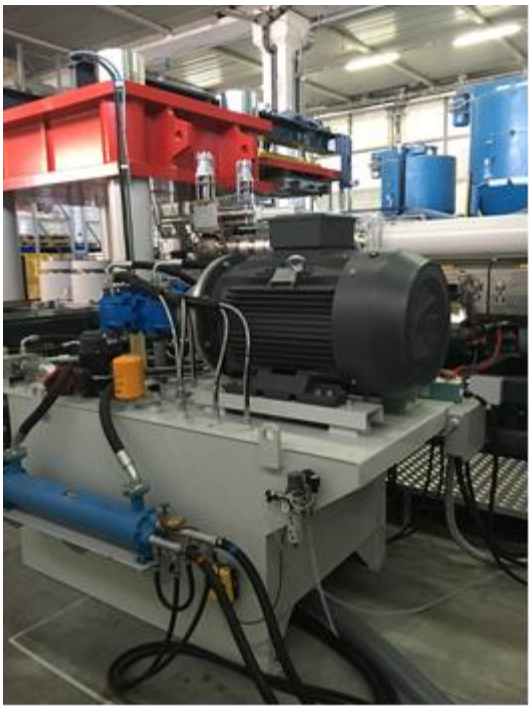
Compressed air duct for vacuum pump



Vacuum pump

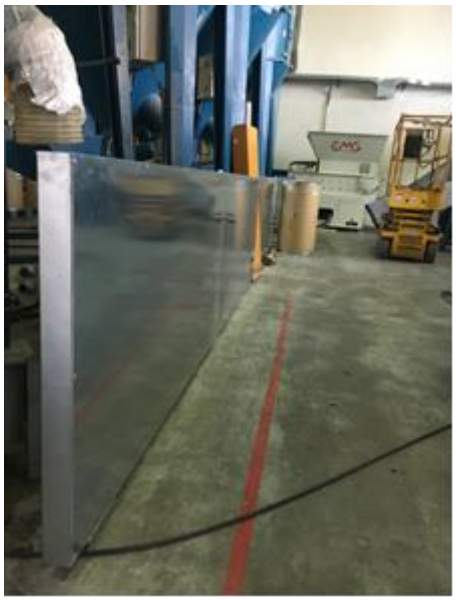


Oil-fired hydraulic unit



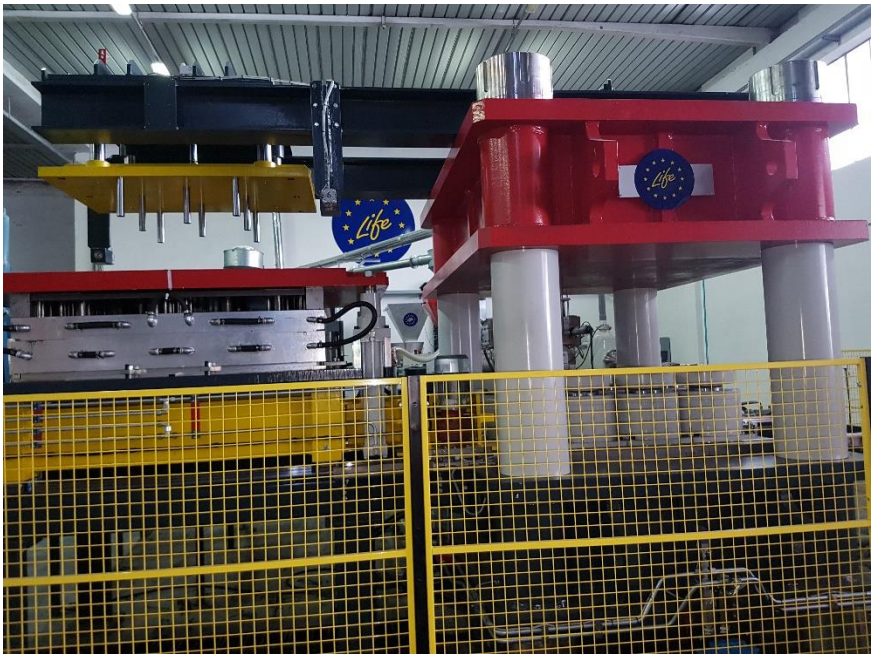
Oil tank supplying the hydraulic unit

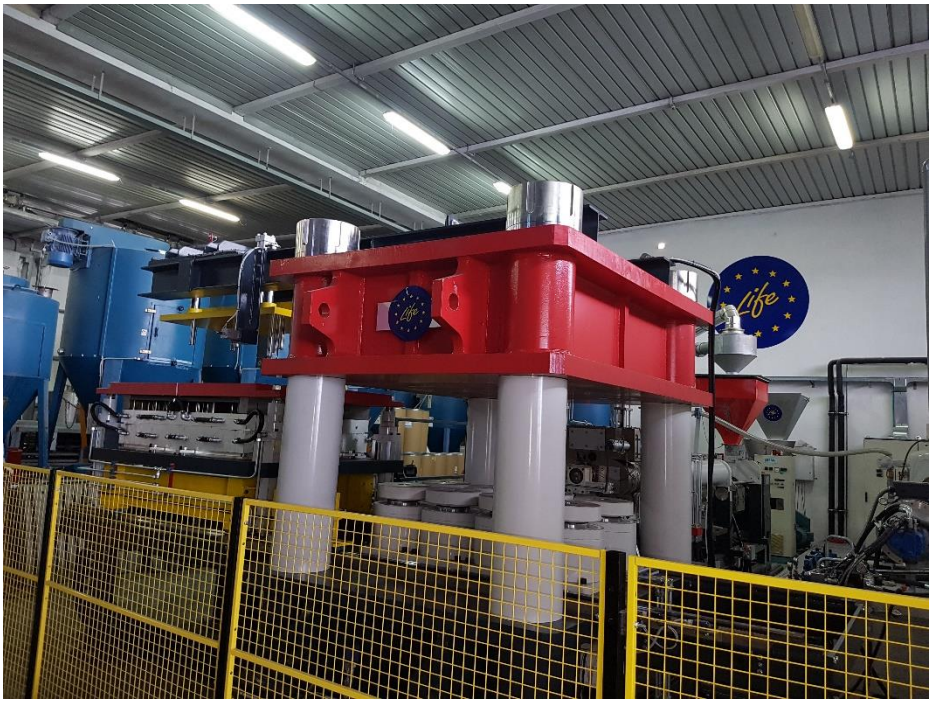
Separator bulkhead from mixer silos

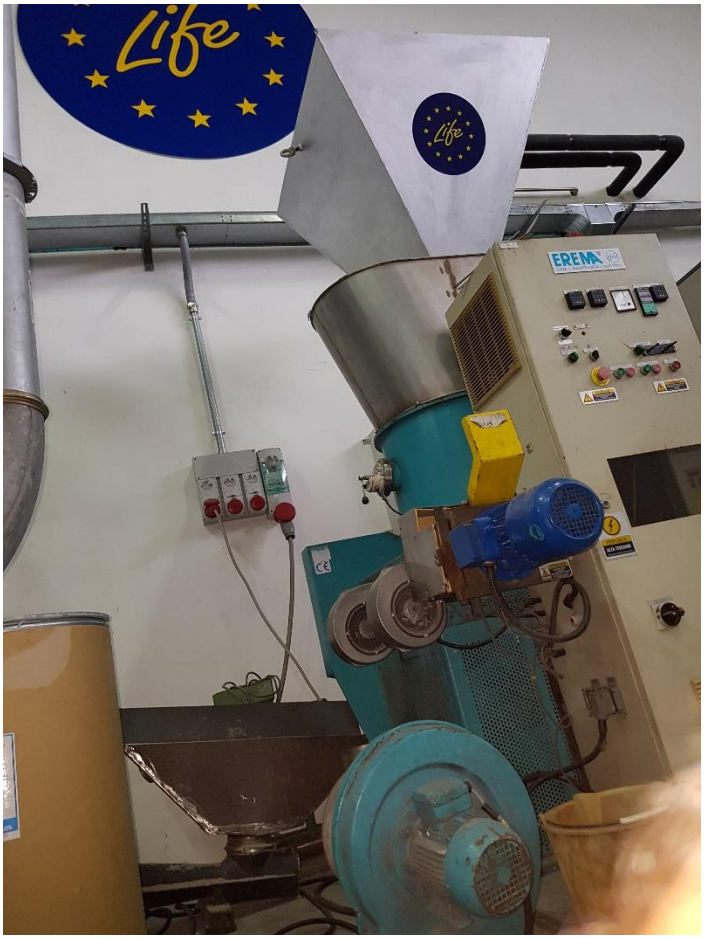


Evidence of LIFE logo label on project equipment at demonstration site

Hereafter are a few images showing the application of the LIFE Logo to project equipment at Selene demonstration site.






EREMA