

TECHNOLOGICAL CARD II: FLOORING WORKS

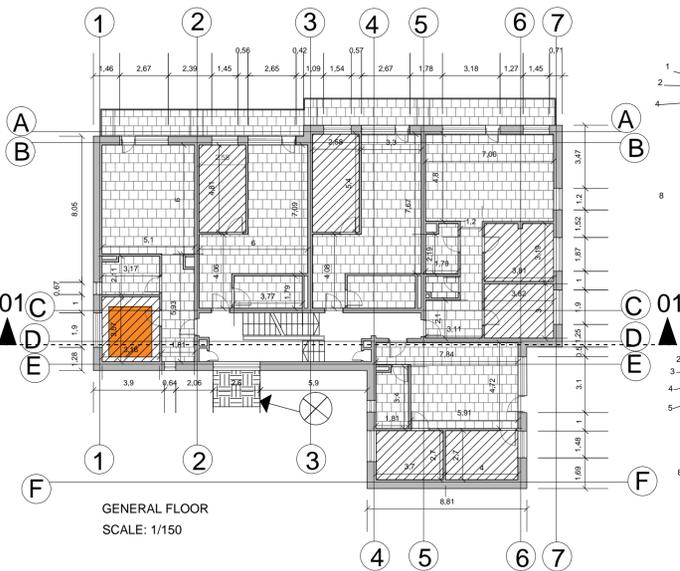
INTRODUCTION

As it isn't specified in the given information, I have chosen different types of covering in the building depending on the characteristics and needs of each area.

In the common areas of the building we are going to put terrazzo because it is very resistant and is going to be the most crowded part inside the building and it is a very resistant material and with a very good quality-cost relationship.

Then inside each apartment we are going to put two different coverings: in the bathroom, the living room and the kitchen there is going to be ceramic tiles. I have chosen it because it is a perfect material for wet areas because of her impermeability, their resistance to impacts and washing. The living room is united to the kitchen so there will be also the same covering as in the kitchen. In the bedroom there is going to be wooden flooring. Because its warmth and aesthetic. In the garage located on the ground floor it is going to be a coating of self-leveling mortar with an epoxy painting, indicated for parking because it has a high level of abrasion resistance.

LOCATION OF DIFFERENT FLOORING



-  CERAMIC TILES
-  LAMINATE FLOORING
-  TERRAZZO TILES
-  TOWER CRANE
-  LOADING DOCK
-  STORAGE AREA

QUALITY CONTROL

The flooring works will be controlled to be executed according to the project. Apart from the execution there will be a control of the materials received in the construction. They would have the specific characteristics that the project asks. All the coating pieces will be marked on them or their packaging by:

- The commercial brand
- First quality mark (in case)
- Reference to the normative UNE-EN14411:2006
- Nominal and manufacture dimensions
- IT IS OBLIGATORY THE CE MARK

RECEPTION:

DOCUMENTAL CONTROL in the reception of each consignment:

-All the marks and documents will be verify to be the same as in the project.

INSPECTION IN THE WORK PLACE:

- It must be ensured that the tiles do not present clear signs of deterioration
- It will check that the tiles do not present signs of having been subjected to transport or improper storage that may have affected the characteristics of the same.

ASSAY CONTROL:

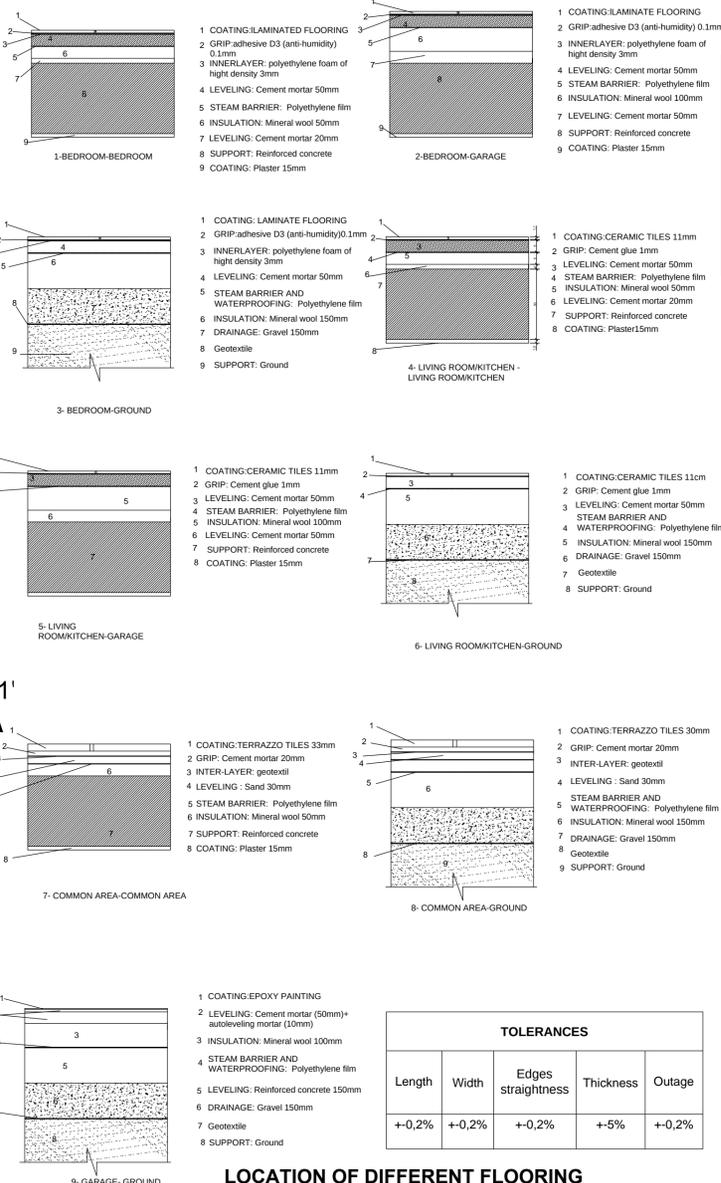
-The products will be split in inspection lots , formed by consignment tiles of the same manufacturer with the same properties and uniform conditions.

- A full assay will be made to inspection lots of more than 2.000m2.

-The assays will be done according to the assay methods specified on the European regulation UNE-EN-UNE-EN ISO 10545-1:1997
-If the results meet the requirements demanded for each feature the lot will be accepted, if not, the Director of Works will decide its rejection or depreciation in view of the studies.

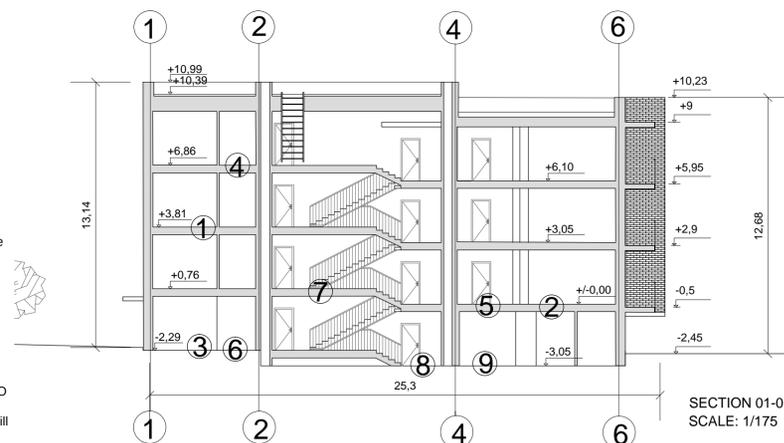


FLOORING DETAILS

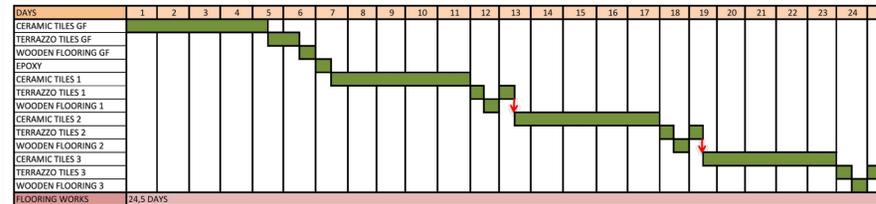


TOLERANCES				
Length	Width	Edges straightness	Thickness	Outage
+/-0,2%	+/-0,2%	+/-0,2%	+5%	+/-0,2%

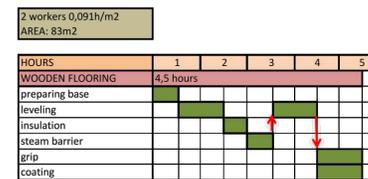
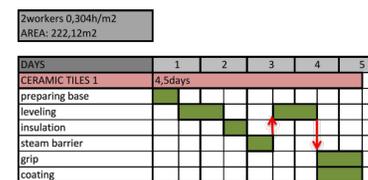
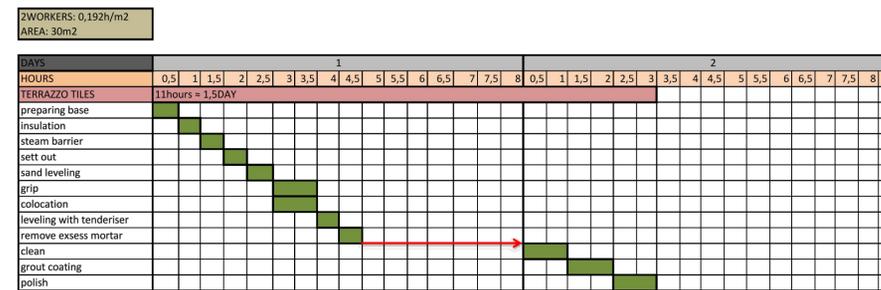
LOCATION OF DIFFERENT FLOORING



SCHEDULE OF WORKS FOR WHOLE BUILDING

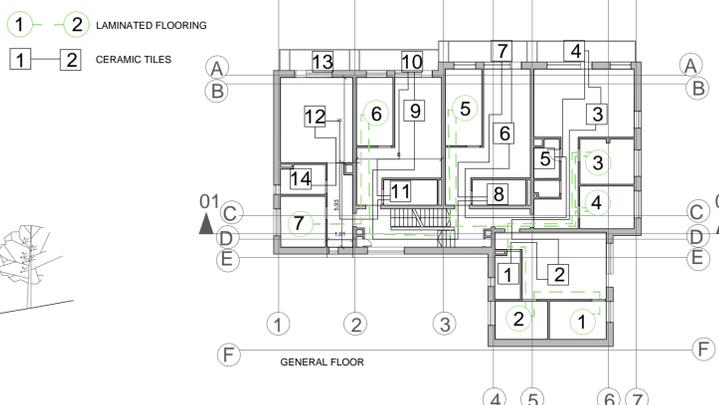


SCHEDULE OF WORKS: In a general floor for each coating



For the flooring works there will be a team of two workers, one First class expert of flooring and a workman of construction. They will have a performance depending on the coating for 1m2. The time of each work depend on the area of the work, the number of workers and its performance and the time of work, 8hours per day and five working days per week.

SEQUENCE OF WORKS



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- PREPARATION OF THE BASE: First of all we have to prepare the base. In the floors where the base are concrete slabs it will be necessary to clean the surface of the slab and guarantee a level surface. In the areas where the base is directly the ground, we have to compact it to have a stable base
- LEVELING LAYER: This layer is to assure a good horizontal finishing of the pavement. We have to put a layer of cement mortar between 2 or 5 centimeters to correct imperfections and some slope. It must be a dosage 1:6.
- INSULATION: to guarantee the protection of warmth and noise we will put a mineral wool of 5, 10 or 15 cm depending on the area where we work. It is a great material for heat insulation and sound absorption. This material also is incombustible and does not fuel fire or propagate flames.
- WATERPROOFING AND STEAM BARRIER: the polyethylene film is a perfect element to solve the waterproofing, it also has a great mechanical characteristics and its use is associated with preventing condensation formed on the thermal insulation. It is always placed in the warm side of the insulation, the side with higher vapor pressure.
- DRAINAGE LAYER: In the floors that are in contact with the ground there must be a drainage layer of 15cm made of gravel and separated from the ground by a geotextile.

DIFFERENT STEPS AT TERRAZZO FLOORING



Leveling with sand layer



Grip: Cement mortar



Fix and level with rubber mallet



Grout and polish

TECHNICAL-ECONOMIC INDICATORS

	AREA (m2)	UNITARY PRICE (€/m2)	TOTAL PRICE (€)
CERAMIC TILES	888,48	20,59	18.298,80
TERRAZZO TILES	120	20,37	2444,4
LAMINATED FLOORING	332	17,04	5657,28
EPOXY PAINT	36,91	7,11	262,43
TOTAL FLOORING WORKS			26657,91

WORK	PERFORMANCE (h/m2)	AREA (m2)	Nº WORKERS	HOURS (h/day)	DAYS
Ceramic tiles	0,304	222,12	2	8	4,5
Terrazzo tiles	0,192	30	2	8	1,5
Laminated flooring	0,091	83	2	8	0,5
Epoxy paint	0,091	36,91	2	8	0,5

	NAME	SIGNATURE	DATE	TITLE OF FINAL THESIS PROJECT
STUDENT	Celia Chardi Perez			Daugiabuicio gyvenamojo namo Žirmūnų g. 1L, Vilniuje, statybos projektavimas Construction planning of the residential building at Žirmūnų str. 1L in Vilnius
SUPERVISOR	Jonas Šaparauskas			PLAN NAME TECHNOLOGICAL CARD II: FLOORING WORKS NUMBER OF PLAN 3
HEAD OF DEPARTMENT	Edmundas Kazimieras Zavadskas			UNIVERSITY DEPARTMENT
REVIEWER				VILNIUS GEDIMINO TECHNIKOS UNIVERSITETAS Department of Construction Technology and Management