RENOVATED WITH RESILIENTS

PVC, RUBBER AND NON-WOVEN TEXTILES HAVE BEEN CHOSEN FOR THE FLOORINGS AND COVERINGS IN THE WARDS, WAITING ROOMS, OPERATING THEATERS, AUDITORIUM AND ACCESS AREAS OF THE "CLINICA DEL LAVORO" IN PAVIA (ITALY).

by Paolo Giglio - Photos by Davide Ottolini

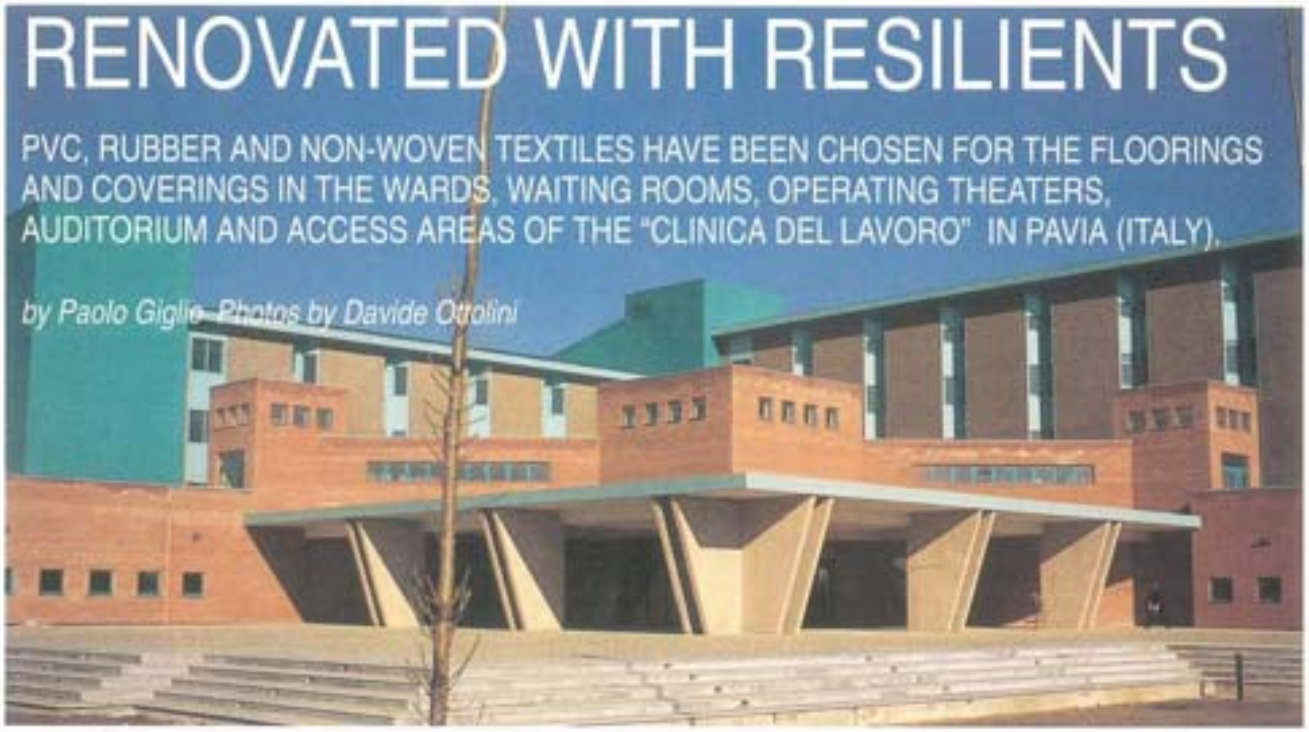

PHOTO 1

PHOTO 2

Photo 1 and 2
The application of ADESILEX F57 on the concrete steps of the auditorium and the successive laying of the non-woven textile.

Photo 3
Detail of the completed auditorium steps.

The Salvatore Maugeri foundation was set up in 1865 as the "Clinica del Lavoro" (Occupational Health Institute), with the purpose of operating in the institutional areas for the protection of occupational health and rehabilitative medicine. Today it represents a valuable asset in the environment of private institutes. Its activity is divided between prevention and actual treatment. In the first instance, identifying and preventing the risks attached to manufacturing activities, in the second, recovering the functional and aptitude capacities of people with neuromotor disabilities, cardio-respiratory and chronic pathologies, favouring social-productive rehabilitation of the disabled and preventing any handicap. The welfare activity supplies a fund of necessary information to support research, which develops along the lines of these themes: occupational and environmental risks in productive activities, rehabilitative neuromotor medicine, rehabilitative cardio-angiology, rehabilitative pneumologia, rehabilitation of other pathologic disabilities and occupational and rehabilitative ergonomics.

Philosophy of the project

"Beautiful, functional, complying with the regulations in use, have been the guiding lines that have inspired the refurbishing project for the interior of the Clinica del Lavoro di Pavia" - declared the designer and Works Director Eng. Michele Calvi.

PHOTO 3

The works involved the floor and wall coverings in the wards, waiting rooms, operating theaters, auditorium and access areas.

Auditorium

The room is intended for conferences, meetings and cultural entertainment.
The concrete steps have first been carefully surfaced

PHOTO 4

PHOTO 5

PHOTO 6

Photo 4
ADESILEX VS45 being spread on the gypsum-board

Photo 5
The sheets of PVC being applied after heating and smoothing

Photo 6
Corners and edges being treated with particular care for a finish that corresponds better to the requirements for total hygiene.

Photos 7 and 8
Details of the finishing in the wards

cleaned, eliminating all the incoherent parts of the support (dust, efflorescence, small stones), and then the surface has been treated with the fixative PRIMER G, an isolating primer in water dispersion that optimizes and guarantees perfect adhesion of the levelling compound to the concrete support. Levelling was carried out using PIANOCEM M. In this case PIANOCEM M has been used to finish the concrete for both the riser and the step. The product has been used with a variable thickness from 1 to 3 mm and then sanded to eliminate all the ripples caused by the trowelling of the material. The non-woven textile Tapison made by Sommer has been used to cover the stairs. For the installation of this material ADESILEX F57 has been used, an adhesive with a base of synthetic resins, that, thanks to its adhesive tenacity and initial grip, allows the execution of overlaps during installation, and the moulding of the material during the working phase. In the photographs it is possible to see the different phases of installation: the application of ADESILEX F57 first with trowel n° 3 (photo 1) and subsequently the cutting and the smoothing with a peen hammer of the Tapison flooring. In this way an excellent job is done, starting from an adequate and correct preparation of the support and of the installation.

The coverings of the wards and of the motor recovery rooms

For the coverings of the wards and motor recovery rooms Mipolam 200 pvc sheets, have been used. The material has been applied on gypsum-board; the joints between the individual sheets have been sealed with gauze in order to guarantee the continuity of the support.
After having applied a coat of PRIMER G, a primer with a base of synthetic resins in water dispersion, on the joints of the panels, the installation has proceeded with the spreading of ADESILEX VS45, an acrylic adhesive in water dispersion, directly onto the gypsum-board and then onto the pvc sheet.
The joints of the sheets have been heated and opportunely smoothed. This technique was made indispensable due to the quite severe atmospheric conditions; it was opportune to soften the material, by means of heating it with a blowtorch, in order to make effective its grip also on the joints.

PHOTO 7

PHOTO 8

Subsequently the joints have been welded during installation anyway.
The process of heating the material has been carried out also in the corners and on the edges. Thanks to these techniques, the resulting finish is excellent, above all along the joints. This is of considerable importance not only from the aesthetic point of view, but above all from the functional point of view, considering the particularity of the place and its requirements for total hygiene. The pvc wall covering has been done in different shades so as to divide the wards, corridors and waiting rooms. The different colour shades were requested by the Works Director and were punctually carried out by the company supplying the material.

The flooring

The substrate on which the flooring was installed, also in this case Mipolam 200 pvc, is of a anhydrite base.

PHOTO 9

PHOTO 10

PHOTO 11

Because of this specific type of substrate it is indispensable to check the level of humidity before proceeding with the installation: in fact it is absolutely essential that there is no rising damp; moreover the humidity of the support must be below 0,5%; these two requirements have been verified and monitored directly on the building site by means of a carbide hygrometer. The installation work was preceeded by surface sanding of the anhydrite surface, a recommended and essential operation, according to the regulations in force.
The installation then proceeded to the spreading of a primer onto the anhydrite, PRIMER G, used for the purpose of separating and avoiding the interaction in time between binders with a base of gypsum and with those with a base of cement; in fact the spreading of PRIMER G anticipates the cement leveller that will follow after a few days. PRIMER G is applied with a spreader; thanks to its light blue colouration, the primer permits the verification of its spreading and priming on the whole surface. The substrate treated like this, has then been refinished with a leveller. For this operation PIANOCEM M has been used, a cement based leveller, that has had added, in the preparation phase, LIVIGUM, an additive for cement mortars and levellers (at a total of approximately 2 kg per 25 kg of PIANOCEM M). The installation of the pvc has been carried out with ADESILEX V4, a water dispersion adhesive, suitable for the installation of vinyl flooring on absorbent supports. For the Radiology ward, Colorex EL conductive vinyl, from the company Forbo, has been used for the flooring. After having followed the same method of preparation for a anhydrite substrate already explained, its installation was carried out with a water dispersion adhesive, ADESILEX V4 CONDUCTIVE, while for the installation of the copper strips the neoprene adhesive ADESILEX VZ CONDUCTIVE was used. The application of the flooring has followed different phases: from the spreading of the glue to the softening of the pvc using blowtorches, and passing finally to the smoothing of the installed flooring. The finishing operations of the flooring have been completed by the preparation of the joints and their successive sealing with pvc beading.
As far as the Radiology ward is concerned, all the necessary techniques for the installation of conductive flooring have been carried out.

The stairs

Finally we move on to analyse the technical solutions adopted for the installation of the covering for the stairs, for which the use of rubber Rollstep, from the company Artigo, was planned. The stairs in rough concrete were suitably levelled and shaped with NIVORAPID, a quick setting and drying cement based thixotropic levelling mortar. NIVORAPID is a very versatile product, it can be used both horizontally and vertically, and moreover it allows, in

PHOTO 12

PHOTO 13

PHOTO 14

PHOTO 15

Photo 9
A flight of stairs smoothed and moulded with NIVORAPID

Photo 10
After being spread on the backing of the rubber sheets, ADESILEX LP is applied to the NIVORAPID cement support

Photo 11
A phase in the installation of the rubber

Photo 12
A phase of the application of ADESILEX V4, which is followed by the laying of the pvc sheets

Photo 13
The sealing of the sheets using pvc beading

Photos 14 and 15
Particulars of the finishing of the joints

Photos 16, 17 and 18
Images of the finished work in diverse environments

the first phase of setting (20/30'), moulding by plastering trowel or damp sponge, ideal for forming corners and rounding off as required, without jeopardizing the mechanical resistance, optimal after about 5/6 hours. For the installation of the rubber ADESILEX LP, a contact adhesive, has been used. The photographs show some phases of the installation of the adhesive: on the backing of the rubber sheets and on the NIVORAPID cement support. Also in this case a system of double spreading the adhesive has been followed: in fact, for a perfect outcome to the operation, it is indispensable that the adhesive is spread in a continuous way on both the supports. The waiting time necessary for the solvents to evaporate varies, depending on temperature.
Once the adhesive is superficially dry, the installation of the rubber can proceed followed by its smoothing onto the flat and rounded corners of the steps. Correct application, combined with suitable installation technology and trained and qualified personnel, have allowed a high level of precision and finishing to be reached, even down to the smallest detail. In this way a work of great quality has been re lised, to which must be added the appreciation relating to the validity of the management of the organizational phase and of the site works. ❑

PHOTO 16

PHOTO 17

PHOTO 18

TECHNICAL DATA

Project: Clinica del Lavoro "Maugeri Foundation", Pavia, Italy

Year of construction: 1995-1996

Contractor: MC3 di T. Marini & C., Milano, Italy

Designer and construction supervisor: Prof. Eng. G. Michele Calvi

Wall and floor coverings:
pvc: Mipolam 200, HT Troplast AG
non-woven textile: Tapison, Sommer
rubber: Rollstep, Artigo
conductive vinyl: Colorex E1, Forbo

Products used for the installation:
PRIMER G
PIANOCEM M
ADESILEX F57
ADESILEX VS45
LIVIGUM
ADESILEX V4
NIVORAPID
ADESILEX V4 CONDUCTIVE
ADESILEX VZ CONDUCTIVE
ADESILEX LP

The technical sheets of the products mentioned in this article are contained in Mapei binder number 2 "Resilients and wood line".