AN INNOVATIVE AGGREGATE FOR EFFICIENT CONCRETE
AGRESTA Technologies has developed a specific aggregate for producing lightweight, insulating and ecologic concrete for many applications. **AGRESLITH-C®** is a wood aggregate which is stabilized by high temperature and mineralizing treatments. Thanks to these treatments **AGRESLITH-C®** is compatible with mineral binders (cement and lime).

- Replaces gravel and a part of sand in concrete mixtures.
- Provides superior acoustic and thermal comfort to buildings.
- Respects environment.
TECHNICAL AND ENVIRONMENTAL CHARACTERISTICS

**Sound Absorption:**
Limits noise pollution up to 55db(A).

**Thermal Insulation:**
Insulates at least 5 times more than conventional concrete.

**Low density (Lightweight):**
From 500 Kg/m³ to 1200 Kg/m³. It is up to 4 times lighter than conventional concrete.

**Mechanical Resistance:**
Compressive strength easily reaches to 6 MPa and tensile strength in bending is 3.5 MPa.

**Hygrothermal Balance:**
Helps to regulate indoor RH (relative humidity) at a comfortable and healthy level.

**CO₂ Fixation:**
350 kg of carbon dioxide are fixed in each cubic meter of aggregate.

**Fire Security:**
Classified M1, «Non-Flammable». It also doesn’t release of toxic smoke during a fire.

**Sawable & Screwable & Nailable:**
Allows installation of screws and nails without drill or rawlplug. It can be cut with a saw.
### Applications

- Lightweight screeds
- Insulating slabs
- External insulation
- Prefabricated elements
- Sound barriers
- Urban furnishings

### High Insulation Power

Concrete with AGRESLITH-C® differs from traditional concretes, because beside its significant lightening property, AGRESLITH-C® offers high mechanical performance, sound absorption and thermal insulation properties.

### Easy Implementation

Concrete with AGRESLITH-C® is very easy to implement both on construction sites and in manufacturing units.
EXAMPLES

INSULATING SCREED ON ROOF AND TERRACE - Formula 800 Kg/m³

LEVEL ADJUSTMENT - Formula 500 Kg/m³

PREFABRICATED NOISE BARRIERS
Combination of lightweight property and thermo-acoustic performance of AGRESLITH-C® makes it a particularly suitable material for restoration and renovation of screeds. Screed made with AGRESLITH-C® can be used in all areas where lightness and easy implementation is required:

- Wooden floor renovation
- Floor heating support
- Floor screeds
- Floor compensation
- Terraces - roofs

Its flexibility of use allows approaching the most delicate construction works (in terms of renovation constraints) such as renovation of historical buildings, monuments, urbanistic works or rehabilitation of social housing.
1. Put water, sand, and cement into mixer according to suitable formula.

2. Mix until the grout is homogeneous.

3. Gradually add polypropylene fibers.


5. Mix in slow rotation.

6. Mixture is ready when aggregates and fibers are uniformly covered with cement.

NECESSARY MATERIALS

CEMENT
Type 32.5
(CPA CEM I 42,5
or CPJ CEM II 32,5 R)

WATER

SAND
0/3 mm

AGRESFIBRES

AGRESLITH-C
AGRESTA has developed different formulas to use AGRESLITH-C® wood aggregate in screeds. All these formulas are suitable for 125 L cement mixer.

**FORMULA 800 Kg / m³ - Standard Formula / Renovation**

This formula is used in the most common cases with a cement mixer (standard formula / renovation). It provides a directly floated screed and it is compatible with any type of coating.

<table>
<thead>
<tr>
<th>WATER</th>
<th>SAND</th>
<th>CEMENT</th>
<th>PP FIBRES</th>
<th>AGRESLITH-C®</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 to 21 Litres</td>
<td>24.5 Litres</td>
<td>35 Kg (1 bag)</td>
<td>100 gr</td>
<td>105 Litres (2 bags)</td>
</tr>
</tbody>
</table>

- Minimum thickness: 6 cm
- Weight per m²: 48 Kg
- Nominal dry density: 800 Kg / m³
- Dry thermal conductivity: 0.21 W / m.K
- Bending tensile strength: 2.6 Mpa
- Compression strength: 1.3 Mpa

**FORMULA 500 Kg / m³ - Special Level Adjustment**

This formula has specially developed for level adjustment. Example: 20 cm to be caught up; first 14 cm should be done with Formula 500 Kg / m³ and last 6 cm should be done with Formula 800 Kg / m³ to provide a smooth and resistant surface.

<table>
<thead>
<tr>
<th>WATER</th>
<th>CEMENT</th>
<th>PP FIBRES</th>
<th>AGRESLITH-C®</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 to 21 Litres</td>
<td>35 Kg (1 bag)</td>
<td>100 gr</td>
<td>116 Litres (2.2 bags)</td>
</tr>
</tbody>
</table>

- Minimum thickness: 10 cm
- Weight per m²: 50 Kg
- Nominal dry density: 500 Kg/m³
- Dry thermal conductivity: 0.112 W / m.K
- Bending tensile strength: 1.7 Mpa
- Compression strength: 0.8 Mpa
**FORMULA 650 Kg / m³ - Natural lime based**

Lime based formula.

<table>
<thead>
<tr>
<th>WATER</th>
<th>LIME</th>
<th>PP FIBRES</th>
<th>AGRESLITH-C®</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 to 25 Litres</td>
<td>30 Kg (1 bag)</td>
<td>100 gr</td>
<td>105 Litres (2 bags)</td>
</tr>
</tbody>
</table>

Minimum thickness: 10 cm  
Weight per m²: 65 Kg  
Nominal dry density: 650 Kg/m³  
Dry thermal conductivity: 0.151 W / m.K  
Bending tensile strength: 1.19 Mpa  
Compression strength: 0.81 Mpa

**FORMULA 1200 Kg / m³ - Floor heating system**

This formula is ideal for floor heating systems. It has been developed for implementation with a screed pump.

<table>
<thead>
<tr>
<th>WATER</th>
<th>SUPER PLASTICIZER</th>
<th>CEMENT</th>
<th>SAND</th>
<th>AGRESLITH-C®</th>
</tr>
</thead>
<tbody>
<tr>
<td>26 to 30 Litres</td>
<td>0.5 to 0.8 Litres</td>
<td>52.5 Kg (1.5 bag)</td>
<td>42 Litres</td>
<td>105 Litres (2 bags)</td>
</tr>
</tbody>
</table>

Minimum thickness: 7 cm  
Weight per m²: 84 Kg  
Nominal dry density: 1200 Kg/m³  
Dry thermal conductivity: 0.38 W / m.K  
Bending tensile strength: 6.6 Mpa  
Compression strength: 3 Mpa

**FORMULA 1000 Kg / m³ - Pumpable ready mix concrete truck**

This formula has been developed for concrete that is manufactured in a factory or batching plant, and then delivered to a work site by pumpable ready-mix concrete truck.

<table>
<thead>
<tr>
<th>WATER</th>
<th>CHRYSO AIR G-100</th>
<th>XL POMPE PIERI</th>
<th>SUPER PLASTICIZER</th>
<th>CEMENT</th>
<th>SAND</th>
<th>AGRESFIBRES</th>
<th>AGRESLITH-C®</th>
</tr>
</thead>
<tbody>
<tr>
<td>260 Litres</td>
<td>0.15 %</td>
<td>0.75 gr</td>
<td>4 to 6 Litres</td>
<td>350 Kg CEM II or</td>
<td>450 Litres</td>
<td>1 Kg</td>
<td>105 Litres (2 bags)</td>
</tr>
</tbody>
</table>

Minimum thickness: 6 cm  
Weight per m²: 60 Kg  
Nominal dry density: 1000 Kg/m³  
Dry thermal conductivity: ND  
Bending tensile strength: ND  
Compression strength: 3 Mpa
PRECAUTIONS BEFORE POURING

- Do not pour below 5°C.
- Cover the surface with polyethylene or breathable film (depending on support).
- Ensure that film covers corners efficiently.
- Leave at least 30 cm film in vertical ascent.
- Set up peripheral joints (expansion and contraction joints, fractionation and separation device, etc.).
- Use welded wire mesh (50 x 50 mm) or polypropylene fibers.

POURING AND PLACING CONCRETE

1. Pour concrete mix onto your surface.
2. Compact slightly. Compaction must be uniform over the entire surface.
3. Ensure that edges and corners are properly filled.
4. Level the concrete across the entire top surface with a trowel or a smooth flat tool.
5. Optionally sprinkle cement and sand onto the surface to fill cavities.
6. Cover the screed with a polyethylene film for 5 days, then remove it and ventilate the surface.

PRECAUTIONS DURING DRYING

- Do not operate on slab during curing phase.
- Protect surface from sunlight, air currents and rain.
- Set up control joints 24 - 48 hours after pouring (if has not done before).
**AGRESLITH-C® CONCRETE SCREED**

- **Wire mesh panel or pp fibers (Agresfibres) in the screed**
- **Breathable film**
- **Old parquet floor**
- **Joists**
- **Peripheral strips**

*If necessary, depends on materials and conditions.

**SCREED FOR FLOOR HEATING:**

1. **AGRESLITH-C® concrete screed with polypropylene fibers**
2. Floor heating system
3. Polyethylene film*
4. Under screed insulation
5. Traditional concrete slab
6. Peripheral strips

*If necessary, depends on materials and conditions.

**SCREED ON COMPRESSION SLAB:**

1. **AGRESLITH-C® concrete screed**
2. Wire mesh panel or pp fibers (Agresfibres) in the screed
3. Polyethylene film
4. Compression slab
5. Peripheral strips

**REINFORCING SCREED ON OLD PARQUET FLOOR:**

1. **AGRESLITH-C® concrete screed**
2. Wire mesh panel or pp fibers (Agresfibres) in the screed
3. Breathable film
4. Old parquet floor
5. Joists
6. Peripheral strips

**INSULATED SLAB ON SOLID SOIL:**

1. **AGRESLITH-C® concrete slab**
2. Wire mesh panel or pp fibers (Agresfibres) in the screed
3. Polyethylene film
4. Form of sand
5. Natural soil
6. Peripheral strips
AGRESTA has been supplying its products for more than 20 years to French and international manufacturers who develop usage of wood aggregates.

**PREFABRICATED MODULAR CONSTRUCTION**

Lightweight performance, mechanical resistance and thermo-acoustic insulation properties make **AGRESLITH-AC®** mineralized wood aggregate a fundamental component for prefabrication of constructive elements.

**NOISE BARRIERS AND SOUNDPROOF SCREEDS**

Because of a significant surface porosity, noise barriers or soundproof screeds made with **AGRESLITH-AC®** constitute an effective sound insulation and are ranked ‘highly absorbent’. Noise dissipates within cavities formed in the wall and is transformed into energy. Unlike conventional noise barriers, noise is absorbed instead of reflected.
Ecological approach:
AGRESTA processes only thinning woods from sustainably managed forests. Moreover, unlike other aggregates for lightweight concrete such as polystyrene, production of AGRESLITH-C® is not harmful to the environment.

Several sizes available:
Our manufacturing unit is especially dedicated to the production of standardized sizes of wood aggregates: 0/3 mm, 4/10 mm, 10/20 mm or specific mixtures.

Excellent resistance:
Because of its fibrous structure, concrete with AGRESLITH-C® has high flexural strength. So, breakage risk is extremely small during displacement of prefabricated elements.

Compatible with admixtures:
In some cases, usage of admixtures is required for implementation. Mixtures formulated with AGRESLITH-C® can incorporate with most traditional admixtures without disrupting their actions.

Easy to transport:
Lightweight property of concrete with AGRESLITH-C® provides lots of advantages to transportation of prefabricated elements on each truck. This reduces transport costs on site. Same principle applies to handling operations on site and in factory, which reduces the power requirement of lifting equipment or trucks.

Storage without constraints:
Mineralization treatment increases aggregate’s durability. AGRESLITH-C® can be stored indoor or outdoor with different packaging options (pallets, big bags or bulk) and without any risk of degradation. Once stored, the material does not fly away, so does not make the surroundings dirty. It does not pollute the environment.
MINERALIZED WOOD AGGREGATE

Agresta technologies

DEVELOPING WOOD PRODUCTS SINCE 1977

Located in the heart of the Vosges Mountains, AGRESTA is specialized in production and distribution of stabilized wood chips.

Our products are recognized worldwide for over 30 years in open space area developments (mulching, permeable coating, playground surface, garden decoration, agronomic substrate, etc.) and in construction sector (aggregates for lightweight concretes, noise barriers, prefabricated houses, etc.).

Raw material is gathered from forests near the factory in a radius of 50 km. As a quality standard logs larger than 25 cm in diameter are not accepted.

Logs are thinning wood from forest maintenance works. This strategy ensures consistency in quantity and quality of supplies. AGRESTA promotes work of local loggers regarding to the development of a green industry.

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