



Lisboa, Tile Panel. *Gabriel del Barco, ca. 1700.*

APFAC, the Portuguese Mortar and ETICS Association.

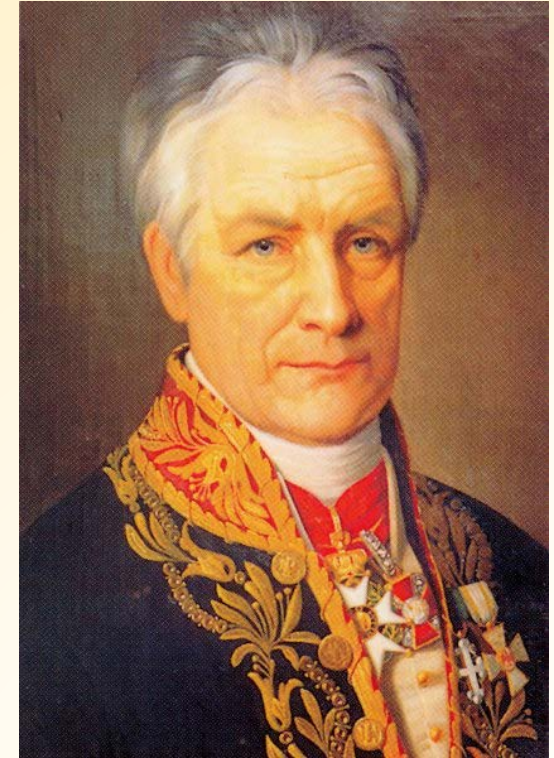
Carlos Duarte

President of EMO, European Mortar Industry Organisation

General Secretary of APFAC, Portuguese Mortars and ETICS Association

>>> The vision of Vicat, 100 years before the 1st Mortar Factory

...Good preparation of mortar is an excessively hard thing to obtain in a work-yard: this difficulty has suggested to different builders the idea of making use of machines, and thereby rendering the manipulation independent of the will or strength of the workmen...



In **Mortars and Cements**, first published in 1837, Louis J. Vicat.

>>> Mortars & ETICS, Portugal 2014



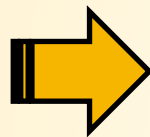
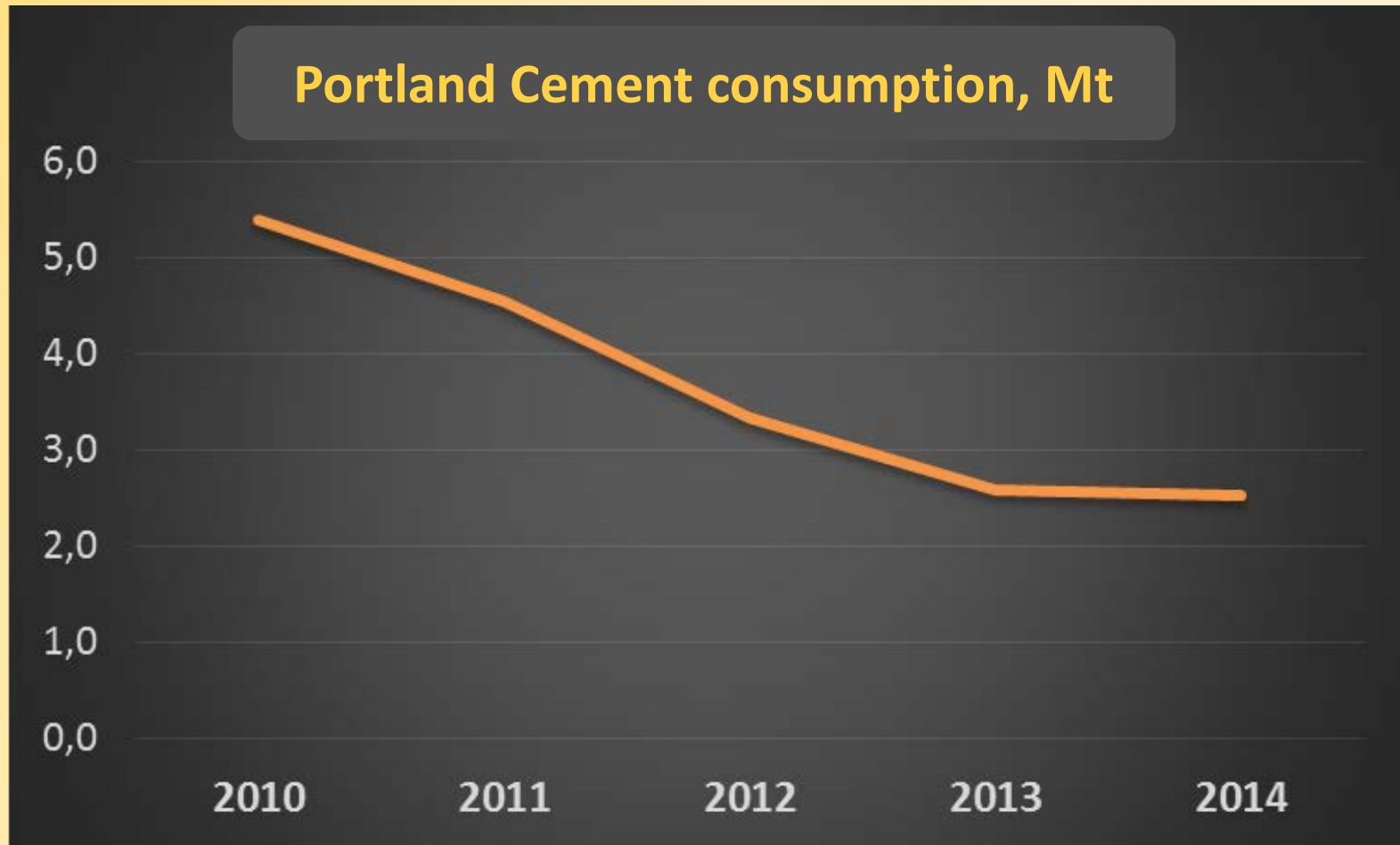
Number of Manufacturers	<i>ca. 30 (18 are APFAC Members)</i>
Dry Mortar	454,000 t
Wet Mortar <i>(supplied ready to use)</i>	16,000 t*
ETICS <i>(External Thermal Insulation Composite Systems)</i>	3.4 Million m ²

** 1 m³ is equivalent to 1.8 t*

Data source: APFAC

Construction in Portugal: consequences of the crisis ...

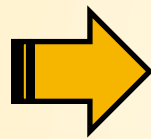
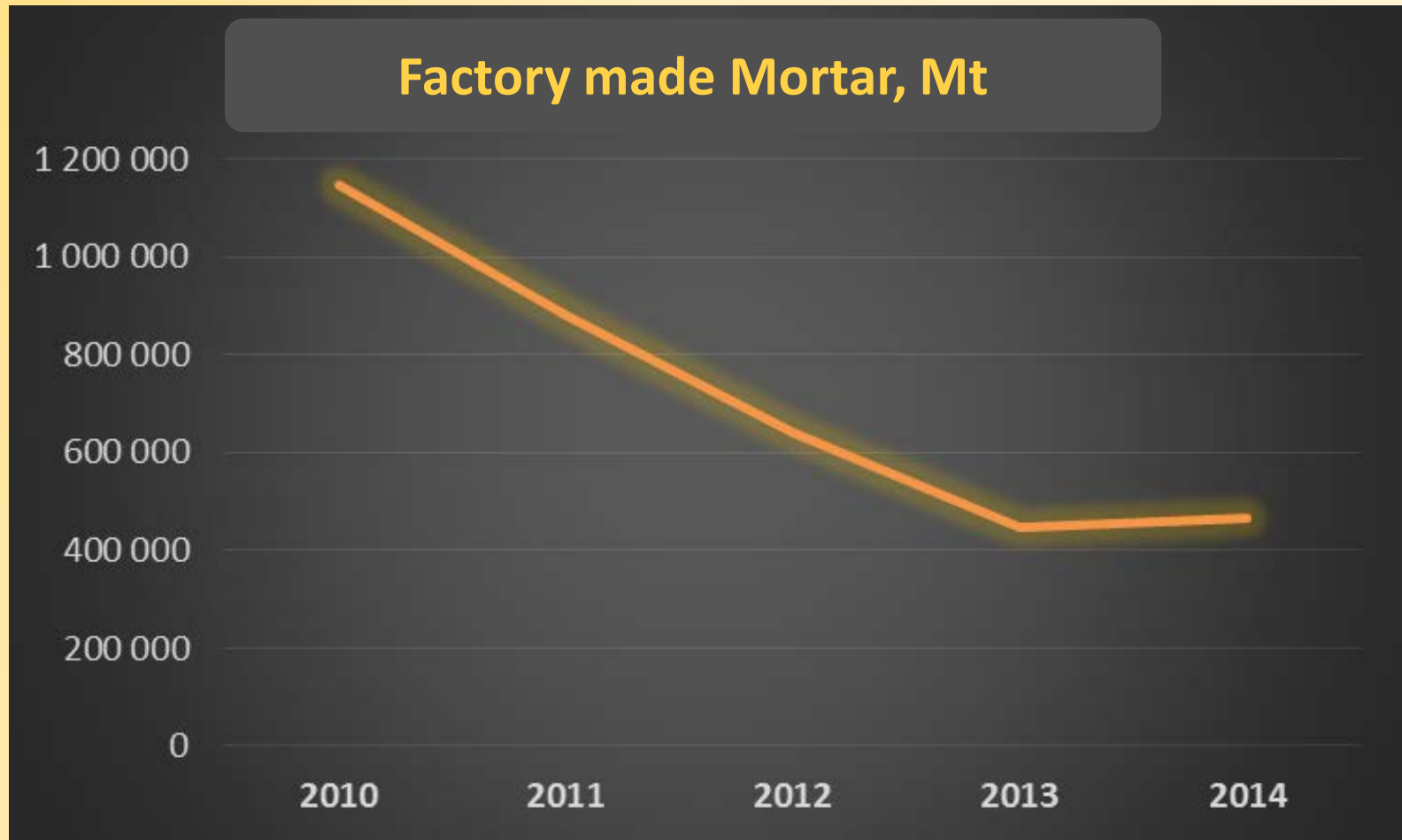
>>> Construction in Portugal: consequences of the crisis...



From 2010 to 2014: a 57 % fall!
(in 2002: ca. 10 Mt)

Data source: Minister of Finance, Portugal

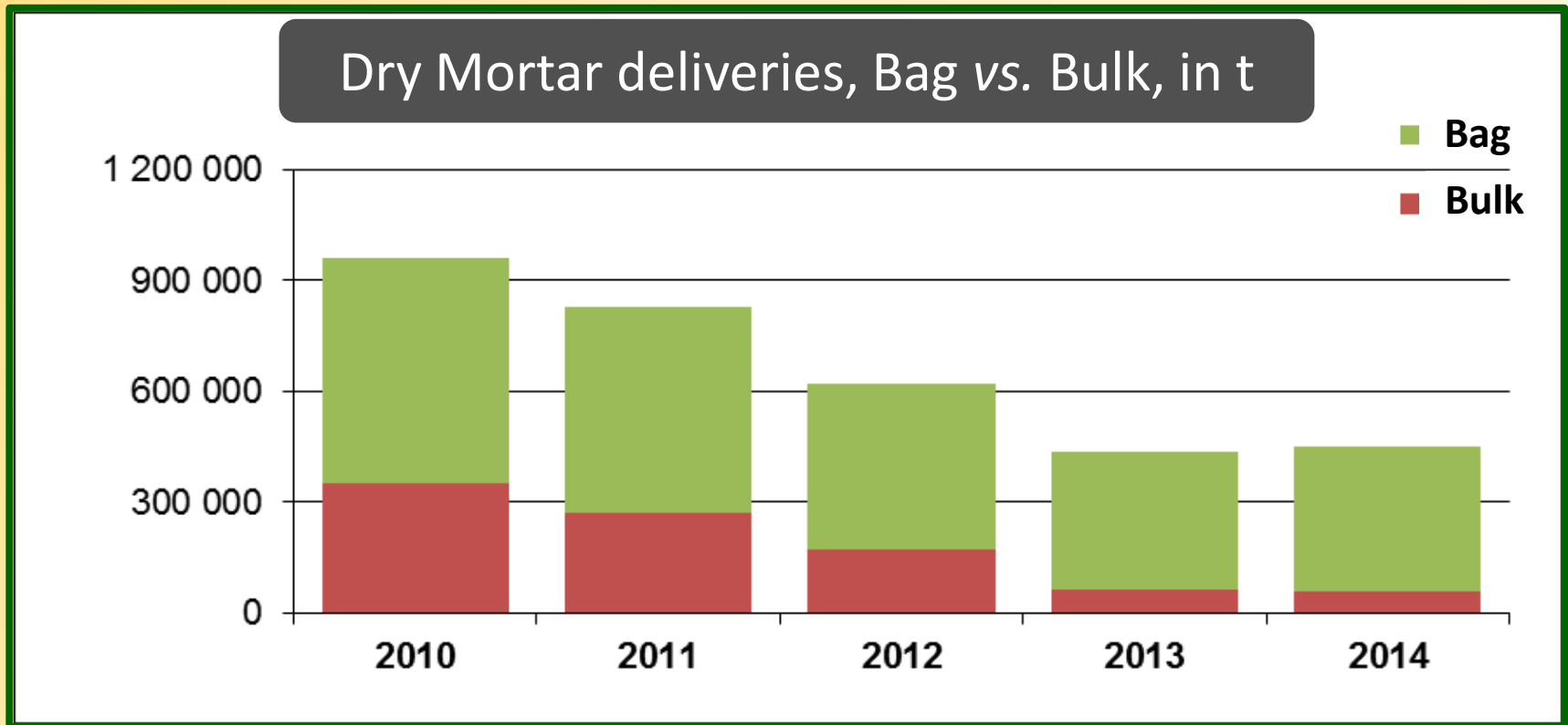
>>> Construction in Portugal: consequences of the crisis...



...after several consecutive years in fall,
a slight rise was noticed in 2014!

Data source: APFAC

>>> Mortars in Portugal



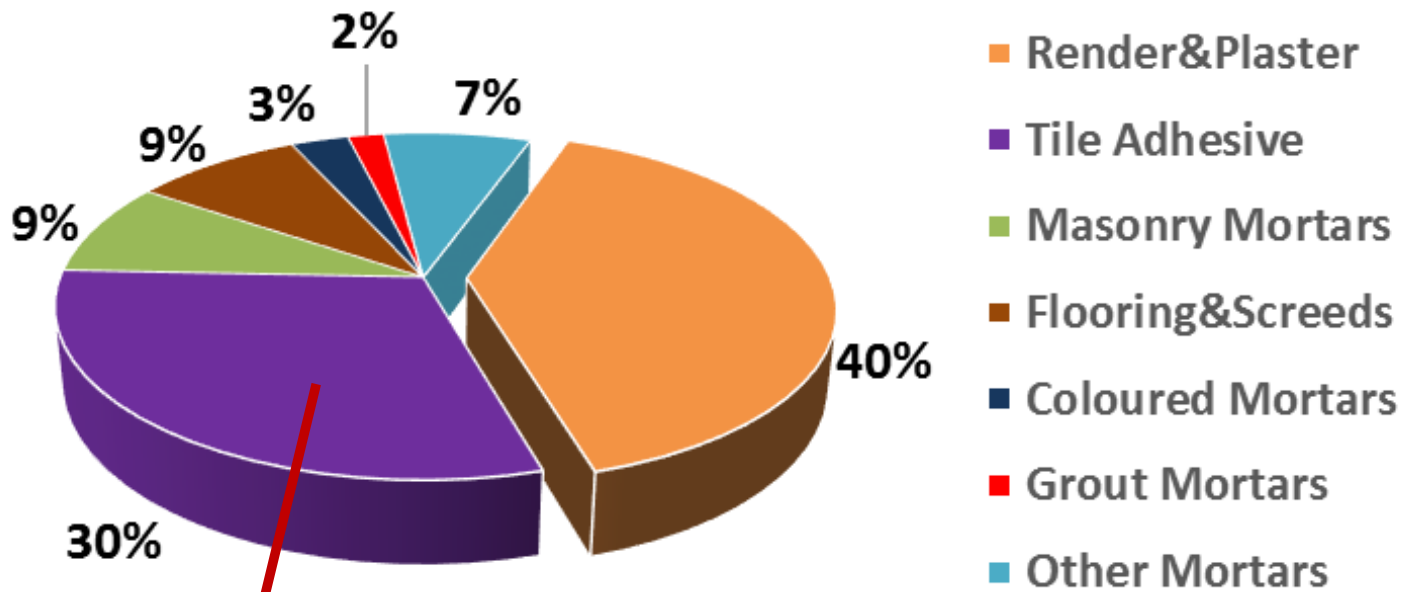
Forecast 2015 (and following years):



Data source: APFAC

>>> Mortars in Portugal (by families)

Dry Mortar, 2014 (% over t)

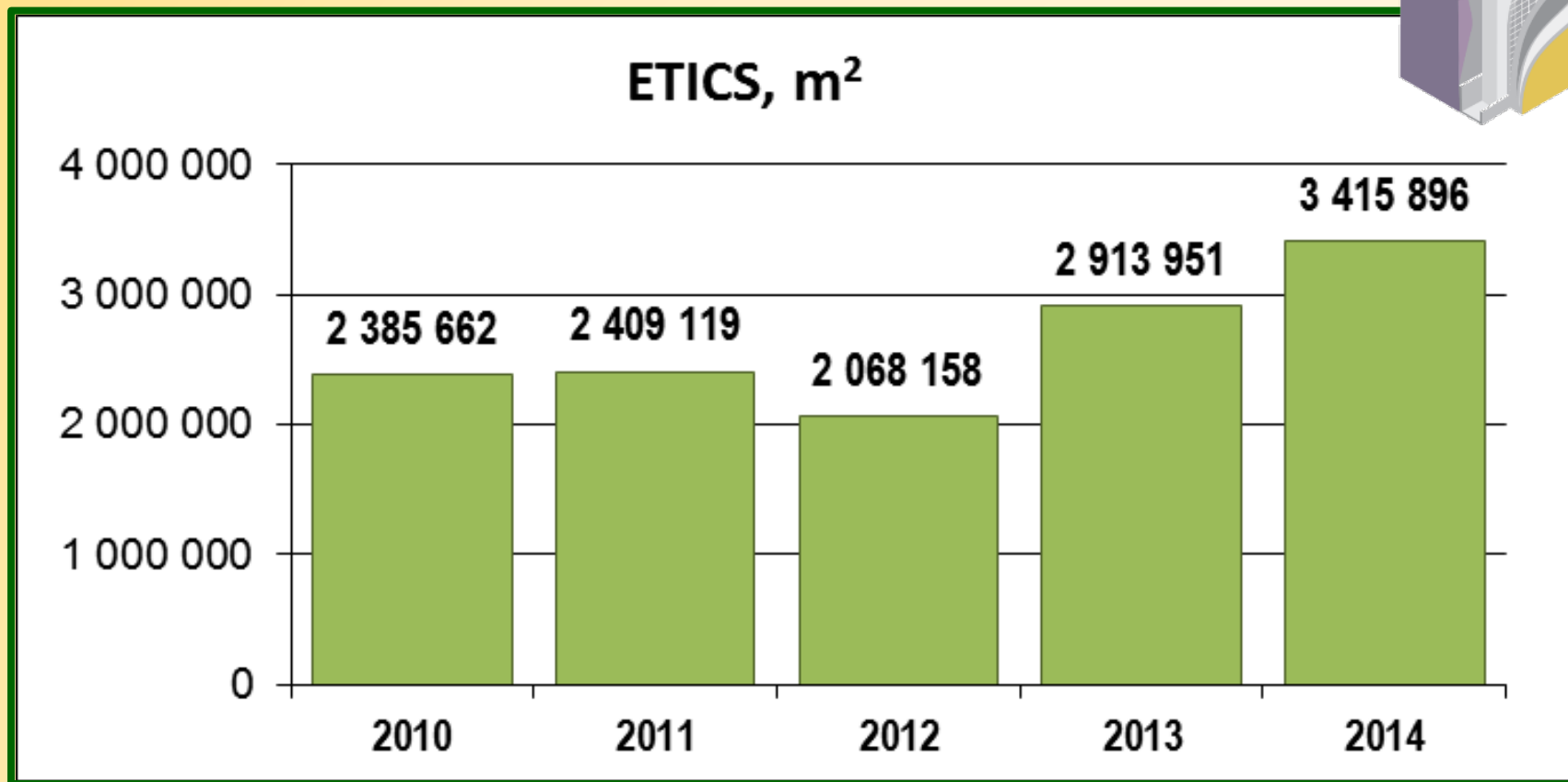
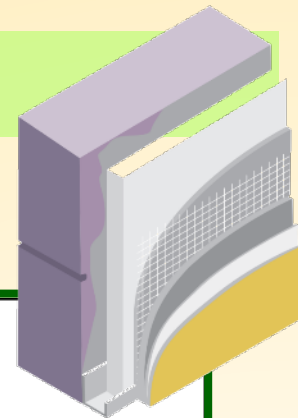


Ranking in €, Tile Adhesive is No One:
48% of the total estimated Dry Mortars sales!

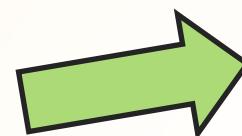
Data source: APFAC

>>> ETICS in Portugal

External thermal insulation composite systems



Forecast 2015 (and following years):



Data source: APFAC

APFAC: our Members

>>> APFAC, the Portuguese Mortar and ETICS Association



18 Members (23 Production Sites)

Small, Medium and Large Companies

National and Multinational Companies

Only Mortar / Mortar & ETICS / Only ETICS

7 Extraordinary Members (Suppliers)

Chemicals, Insulation, Packaging.

APFAC Head Office is now located in Coimbra.

Main projects on the move...

>>> Tile Adhesives in façades

The problem:

- The Portuguese **tradition of Ceramic façades is decaying**: situations of failure with tiles detachments.
- **Ceramic is more exigent**, due to low porosity and large dimensions/weight of the tiles.

The conclusions:

1. An abnormal consumption of adhesive C (NPD^{*}) is an alert to extensive areas **using unsuitable adhesives for external use**.
2. Frequently, **applicators skills are insufficient** for those complex tasks.

Reference: EN 12004:2007, *Adhesives for tiles*.

** No performance determined*

What is APFAC doing?

1. Workshops with the **Ceramic Products Association**, showing tile application under the best available techniques.
2. Contribution to reviewing the **curricula of professional training courses**, in a partnership with Vocational Training Centres.
3. A **complete survey** of tile adhesives on the market (commissioned to an independent Laboratory) to verify:
 - If the requirements are respected (CPR, Standards, DoP,...);
 - If the manufacturers' recommendations are clear for the users and guarantee a **fair competition**.

Mortar and ETICS Pathologies.

>>> Mortar and ETICS Pathologies.

Pathologies are frequently a source of conflicts among Manufacturers, Applicators and Customers.

APFAC subcontracted a Pathologies study to an independent and renown Laboratory (from *Faculty of Engineering of Oporto University*).

Since 2008, a comprehensive collection of Pathologies (Mortars and ETICS), is available for download from our website.

Periodically, updates and new Pathologies are included.



ETICS: a growing Market (but ... with dangers).

>>> ETICS: a growing Market with risks.

In the last 15 years, ETICS became an attractive growing market in Portugal.



1. However, *multi source systems* proliferate instead of **single source** (one supplier responsible for the whole system), with the aim of lowering the price, but seriously affecting the performance and developing pathologies.
2. Furthermore, unskilled installers propose their own (cheap) systems **with insufficient thermic performance!**

Conclusion: a poor image of ETICS starts developing, with serious consequences!

What is APFAC doing?

1. A partnership with the **Portuguese Agency for Energy** to create a training programme for ETICS installers.
2. **Theoretical topics:** under the responsibility of 2 renamed Institutions, one for Lisbon, the other for Oporto.
3. **Practical topics:** under the responsibility of APFAC members in cooperation with 2 Vocational Training Centres, one in Lisbon, the other in Oporto.
4. Before registration, trainees should evidence **at least 2 years of experience**.

At the end of a successful course, the trainee will be granted as a “Certified ETICS Installer”.

Forecast for the next years...

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The challenge to the R&D of Manufacturers, Universities and Institutions will continue on the following topics:

1. Mortars for Rehabilitation and Renovation works;
2. Better ETICS
3. Thermal Insulating Mortars (*Renders, Flooring, Screeds,...*)
4. Technical Mortars:
 - Complex compositions for specific applications;
 - Nano-additions to improve mechanical and durability properties, as well as resistance to pathologies.

**...under the scenario of Saving Resources and Sustainability.
Reduce, Reuse, Recycle...**

>>> Our homage to Coimbra (City of our Head Office)



***University of Coimbra: founded in 1290 (725 years ago).
UNESCO World Heritage List.***

***geral@apfac.pt
www.apfac.pt***

Thank you very much.