Quality of system and the works of solar shading devices

Qualicheck Conference Athens, 9th March 2016
Ann Van Eycken, secretary general
Who are we?

• The umbrella body of the Solar Shading Trade associations
• Representing 18 European countries
• Solar Shading in Europe
  • 400,000 people
  • across 28 States of the EU
  • over € 35 billion

www.es-so.com
ES-SO’s ambition is to

- realize energy savings in buildings
- reduce CO₂ emissions strongly (COP21!)
- provide better liveability by optimising natural daylight
- develop local employment in the EU member states
- Bring our technology to its rightful strong development
- Our smart technology is a necessity and no longer a fix
ES-SDA - European Product Database: bring validated values to market for energy savings and building simulations, 2016

ES-SO training for shading professionals and architects: First level in 2016 create group of specialists from associations

ES-SO Seminars worldwide:
A NEW VISION ON SOLAR SHADING

Solar and daylight management
an essential part of the energy performance of buildings

• Digital Brochure on ES-SO website
• Limited printed version
• PPT
• Available for local distribution & communication
Solar shading: from a “component” to a “concept” of solar & daylight smart dynamic management in Buildings

<table>
<thead>
<tr>
<th>Saving energy and costs</th>
<th>Increasing comfort, health, productivity and wellbeing</th>
</tr>
</thead>
<tbody>
<tr>
<td>For cooling</td>
<td>Maximize natural daylight</td>
</tr>
<tr>
<td>For heating</td>
<td>Keep the full colour rendering of transmitted light</td>
</tr>
<tr>
<td>For artificial lighting</td>
<td>Reduce glare and filter daylight</td>
</tr>
<tr>
<td></td>
<td>Reduce overheating</td>
</tr>
</tbody>
</table>

→ Integrate smart Solar Management in the design of sustainable buildings

BEFORE the glass is chosen!
ES-SO 2014 Study: “Dynamic shading solutions for energy efficient buildings”

Energy savings and CO₂ reduction Escorp 2005 figures updated

If 75% use of dynamic solar control, we could reach:

Heating savings 25,4 Mtoe/year (14%) + Cooling savings 23,9 Mtoe/year (30%)

Heating and Cooling CO₂ savings = 117 MtCO₂/year

⇒ OVERALL (new build and refurbishment) energy savings for cooling and heating by dynamic solar shading solutions can easily exceed 19%*!

*Energy-use assumption of 30% cooling and 70% heating will inverse by 2050!
Quality and solar control
Quality of systems and works related to solar control solutions:

- Training material (ES-SO and local)
- Recognition/certification of persons/companies
- Technical approvals concerning the components and systems
About shutters and blinds

A complete set of standards

- **EN 13659** – Shutters
- **EN 13561** – External blinds and awnings
- **EN 13120** – Internal blinds

### Terminology
- **EN 12216**
  - Terminology
- **EN 13125**
  - Thermal resistance
- **EN 14759**
  - Acoustic
- **EN 14501**
  - Thermal and visual properties

### Specific requirements
- **EN 1932**
  - Wind resistance
- **EN 1933**
  - Water accumulation
- **EN 12045**
  - Transmitted force
- **EN 12194**
  - Misuse

### Test methods
- **EN 12833**
  - Snow load
- **EN 12835**
  - Air permeability
- **EN 14201**
  - Mechanical endurance
- **EN 14500**
  - Thermal and visual properties

### Drives
- **EN 60335-1**
  - General requirements
- **EN 60335-2-97**
  - Specific requirements for shutters and blinds drives
- **EN 14202**
  - Tubular and square motorisation
Quality of systems and works related to solar control solutions:

- Training at local level
  - Finland - The Finnish Solar Shading Academy: collaboration with Tampere Adult Education Centre (TAKK)
  - Program in 2 parts
    - Solar Shading as part of building envelope and control
    - Business Management and Development
      - During daytime between Oct and March
      - Content: shading, installation, customer service, safety, electricity, automation, HVAC
      - Teaching: shading profession, school, other professional associations
      - Written exam -> Graduation with certificate
      - Shading part program compulsory for Shading Association members
  - Key-elements: increase level of professionalism, speak same language as other professionals, recognize professional excellence
Quality of systems and works related to solar control solutions:

- **Training at local level**
  - Sweden – Two days’ training for shading technicians (+ self study)
    - Climate data, simulations in software tool (Parasol – now ESBO), LCC and ROI.
    - Course and Certificate at Mälardalen University in Västerås
  - The Netherlands: organized by Romazo, professional association – 3 types
    - Professional training for solar shading installers – 2 to 4 days.
    - Training about Solar shading, energy and climate (2 days)
    - HR training for installers to become a HR installer (1 day)
    - Training to install automation
  - Other countries: Austria – train the trainer session, France [http://bmetalformation.fr/](http://bmetalformation.fr/)

- **Other locations**
  - The Netherlands: organized by Romazo, professional association – 3 types
Quality of systems and works related to solar control solutions:

• Training material at ES-SO level: Focus on core competence shading
  • The inner ring stands for the room and its indoor climate which depends on solar shading.
  • The middle ring shows the drivers for the market. Politics demand a rethinking in terms of energy supply and energy consumption.
  • The outer ring represents the three pillars of sustainability

• Step by step approach training material
  • Basic level 2016
  • Expert level 2017

• E-learning
• Train the trainer – national courses
• Certification
Quality of systems and works related to solar control solutions:

- Recognition/certification of persons/companies: two examples
  - France
  - U.K.
Quality of systems and works related to solar control solutions:

• Certification of companies

• RGE label France - 4 years for defined group of activities

  Key-elements: energy efficiency new build/renovation residential

  ✓ Education: professional competence

  ✓ Skills: energy performance competence

  ✓ Audit: objective and independent on site & admin; 2 yrs after RGE

  ✓ Democratic cost for company – compulsory for eco construction (financial incentives)

  ✓ Free access to extranet Qualibat, Norms & Regulation in activities recognised
Comment devenir RGE ?

Compétences et formation + Qualification métier + Demande de la mention = pour la famille à laquelle appartient la qualification de métier

Efficacité énergétique

Délivrance pour 4 ans
Contrôle de réalisation dans les 24 mois

OU

Compétences et formation + Qualification métier + Charte Bâtir avec l'Environnement Et demande de la mention = pour la famille à laquelle appartient la qualification de métier

Délivrance pour 4 ans
Contrôle de réalisation dans les 24 mois
Le Dispositif FEE Bat

Les modules de formation

Questions Réponses

Accueil  Contexte et Objectifs  Public concerné  Parties prenantes

« L'efficacité énergétique des bâtiments, ça ne se fait pas comme par magie, ça s'apprend ! »

Chef d'entreprise, avec les formations FEE Bat, gagnez de nouveaux marchés !

Nouveau module RENOVE

Devenir Responsable Technique en Rénovation Énergétique de logements

Les modules de formation FEE Bat

Module 1
Identifier les éléments clés d'une offre globale d'amélioration énergétique des bâtiments

Module 2
Maîtriser les outils pour mettre en œuvre un offre globale

Module 3
Connaître, maîtriser et mettre en œuvre les groupes de technologies performantes d'amélioration énergétique des bâtiments

Module 4
Porter l'offre globale de rénovation énergétique

Module 5
Construire des bâtiments résidentiels basse consommation ; RT2012 et perméabilité à l'air

Formations co-développées par:

[Logos associés]
Quality of systems and works related to solar control solutions

- Certification of persons
- U.K.

National Occupational Standard (NOS)
developed for blind and shutter trade:

- Install internal blinds or solar shading systems
- Install external blinds, screens or solar shading systems
- Service or maintain blinds, screens or solar shading systems
PAS 2030:2012 Edition 2
Improving the energy efficiency of existing buildings
Specification for installation process, process management and service provision

✓ Publicly available standard
✓ Used by UK Government
✓ Competence of staff determined
Cskills Awards L2 NVQ Diploma in Specialist Installation Occupations (Construction) - Blinds and Solar Shading Systems - Installation and Maintenance

QLK300
601/1968/8

Qualification Overview

The aim of this qualification is to recognise the knowledge, skills and competence demonstrated by an individual in the workplace. This Level 2 NVQ Diploma in Specialist Installation Occupations - Blinds and Solar Shading Systems - Installation and Maintenance provides the opportunity for individuals who specialise in the installation of blinds, shutters, drapery and solar shading systems to demonstrate their competence. The units in this qualification are derived from National Occupational Standards.

Unit Details

<table>
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<tr>
<th>Unit Code</th>
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<tbody>
<tr>
<td>QCF641</td>
<td>Conforming to General Health, Safety and Welfare in the Workplace</td>
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<tr>
<td>QCF642</td>
<td>Conforming to Productive Working Practices in the Workplace</td>
</tr>
<tr>
<td>QCF641</td>
<td>Installing external blinds, screens or solar shading systems in the workplace</td>
</tr>
<tr>
<td>QCF640</td>
<td>Installing internal blinds or solar shading systems in the workplace</td>
</tr>
<tr>
<td>QCF643</td>
<td>Moving, Handling and Storing Resources in the Workplace</td>
</tr>
<tr>
<td>QCF642</td>
<td>Servicing and maintaining blinds, screens or solar shading systems in the workplace</td>
</tr>
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Vocational Qualification - Installation

3 Mandatory Units

1. General health and safety
2. Productive working
3. Moving, handling and storage of products

Any 2

1. Internal blinds
2. External blinds
3. Service and maintenance
Cskills Awards L3 NVQ Diploma in Specialist Installation Occupations (Construction) - Survey for Installation

QUB866
601/5002/6

Qualification Overview

The aim of this qualification is to recognise the knowledge, skills and competence demonstrated by an individual in the workplace. This Level 3 NVQ Diploma in Specialist Installation Occupations - Survey for Installation, provides the opportunity for individuals who specialise in this area to demonstrate their competence in surveying techniques appropriate for the installation of building components. The units in this qualification are derived from National Occupational Standards.

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<tr>
<td>QCFDC06</td>
<td>Conduct a health and safety risk assessment of the workplace</td>
</tr>
<tr>
<td>QCF211v2</td>
<td>Confirming the Occupational Method of Work in the Workplace</td>
</tr>
<tr>
<td>QCF209v2</td>
<td>Confirming Work Activities and Resources for an Occupational Work Area in the Workplace</td>
</tr>
<tr>
<td>QCF210v2</td>
<td>Developing and Maintaining Good Occupational Working Relationships in the Workplace</td>
</tr>
<tr>
<td>QCFOSCC004</td>
<td>Prepare for, collect, analyse and present survey data in construction</td>
</tr>
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</table>
Quality of systems and works related to solar control solutions:

• Technical approvals concerning the components and systems

• NF - France
• CSTB label - check points performances system:
  • E.g. roller shutters
  • wind resistance
  • mechanical durability
  • operation ease
  • operation errors
  • choc resistance
  • sun exposure
  • occultation
  • thermal resistance
  • Solar factor
Quality of systems and works related to solar control solutions:

• Technical approvals concerning the components and systems
• Minergie quality label – Switzerland

• Building (new/renovated) and component level
• Minergie Building certificate and registed
• Component level: Minergie Solar Shading Module:
  - External shading (blinds or awnings)
  - Automation (sun, wind, comfort)
  - Sun protection, daylight, glare protection, standby current, etc.
  - Requirements regarding mounting
  - Guaranty and responsibility
Thank you for your attention!

Ann Van Eycken
Secretary General