WP 3. Integration in buildings

Work package No.: WP 3	**Starting month:** 0								
Work package title: Integration in buildings									
Activity Type[1]: Coordination activities									
	Leader	**Other partners with major involvement**							
Partner No.:	AEE	ITW	ARS	TNO	SP	INETI	CSTB	SERC	ECO	UNI O
Person-months per partner:	4.2	1.2*	0.8	0.8	1.0	1.9	2.3	1.7	0.6	1.6

* additional external support equivalent to 0.6 person month by Harald Drück

WP 3: Objectives

The objectives for WP3 are:

- Pre-normative work on uniform methodologies, guidelines and reference calculations to help solar heating industry and installers to fully integrate solar heating systems in the new directive on Energy Performance of Buildings 2002/91/CE published in January 2003. The results may be partially applicable to PV systems too.
- Disseminate efficient methods for integration of solar thermal products in the energy supply installations of new and existing buildings, including conventional heating appliances and the integration of solar thermal functions in building components.
- Establish and disseminate recommendations for product development in terms of low fail installation, “plug and play”, installation check and maintenance.
- Disseminate innovative ways of integrating solar thermal with focus on the architectural and aesthetic points of view in new and existing buildings.

WP 3: Description of work

a.) Building integration requirements and methods

In this work package, based on available (national) guidelines on integrating solar thermal in building envelopes and information on upcoming European directives, an overview of requirements will be established and the possibilities for uniform requirements will be discussed according to the requirements and suggestions of the new directive 2002/91/CE. Furthermore, pre-normative work on test and check methods related to these requirements will be started.
The aspects to be studied will for instance be the performance of conventional roof-integrated solar thermal, including:

- Strength of construction (wind / snow)
- Avoid fire risk
- Avoid noise problems
- Avoid construction damage
- Avoid air leakages / thermal leakage (*thermal bridges)*
- Rain and moisture penetration
- Avoid environmentally problematical materials

[1] For Coordination Actions each work package must relate to one (and only one) of the following three possible Activity Types: Coordination activities, Training activities, Management activities.

- Durability of the integration techniques
- Easy integration of solar components in building process
- PLUG AND PLAY conditions
- "Low failure" commissioning
- watertightness and maintenance of the roof

Work Actions

- Make inventory of existing regulations, guidelines and national standards concerning integration of solar building components.
- Find gaps in knowledge and regulations
- Establish expert groups to deal with gaps and find solutions on building integration
- Discuss recommendations for the development of standards and guidelines
- Workshop on the state of the art and options concerning integration of solar thermal functions in building components, e.g. prefabricated roofs, windows, floors (shift of assembly to production plants)

b.) Integration of solar thermal components in conventional and other installations

Disseminate efficient methods for integration of thermal solar products into the energy installations of new and existing buildings, including conventional heating appliances and the growing market for pellet burners.

c.) Simplification of the installation process

Establish and disseminate recommendations for product development in terms of low fail installation, plug and play, installation check and maintenance.

d.) Aesthetic and architectural questions

Disseminate innovative ways of integrating solar thermal from architectural and aesthetic points of view in new and existing buildings. A leaflet will be developed with the newest developments in Europe in this respect.

WP 3: Deliverables

a.) Building integration requirements and methods

- WP3.D1: Reports of meetings to bring together existing requirements and methods
- WP3.D2: Overview of existing requirements in EU countries and directives
- WP3.D3: Recommendations for uniform European requirements
- WP3.D4: Workshop on integration of solar thermal functions into building components

b.) Integration of solar thermal components in conventional and other installations

- WP3.D5: Recommendation of concepts for easy installation and integration in conventional heating appliances (including wood pellet burners)
- WP3.D6: Articles in dedicated magazines for solar industry

c.) Simplification of the installation process

- WP3.D7: Recommendations for development of easily installable products
- WP3.D8: Articles in dedicated magazines for solar industry

d.) Aesthetic and architectural questions

- WP3.D9: Examples of successful aesthetic integration

- WP3.D10: Dissemination to architects' magazines

WP 3: Milestones[2] and expected results

a.) Building integration requirements and methods

- WP3.M1: Inventory of existing guidelines – selection of adaptation actions and missing knowledge (month 6)

b.) Integration of solar thermal components in conventional and other installations

- WP3.M2: Recommendations for integration of solar thermal, discussed with involved parties (e. g. heating industry, planners) (month 12)

c.) Simplification of the installation process

- WP3.M3: Recommendations ready for dissemination, discussed with involved parties (e. g. craftsman) (month 24)

d.) Aesthetic and architectural questions

- WP3.M4: Summary of aesthetic integration examples, discussion on dissemination with involved parties (e. g. architects) (month 30)

[2] Milestones are points where major results have successfully been achieved as the basis for the next phase of work, or which serve as control points at which decisions are needed; for example concerning which of several technologies will be adopted as the basis for the next phase of the project.