

# Price list – SPF Testing

## Optical measurements

|  | <b>EUR</b> |
|--|------------|
| <b>Transparent Covers, Glazings</b>  |            |
| Transmission measurement I ST (solar thermal, max. sample size 300 x 200 mm)                               |            |
| Transmission spectrum 0.29 $\mu\text{m}$ – 2.5 $\mu\text{m}$ , determination of transmittance .....        | 570        |
| Transmission measurement II ST (solar thermal, samples up to collector size)                               |            |
| Transmission spectrum 0.30 $\mu\text{m}$ – 1.7 $\mu\text{m}$ , determination of transmittance .....        | 570        |
| Transmission measurement I PV (photovoltaic, max. sample size 300 x 200 mm)                                |            |
| Transmission spectrum 0.29 $\mu\text{m}$ – 2.5 $\mu\text{m}$ , determination of transmittance .....        | 1'600      |
| Incidence Angle Modifier ST (IAM), solar thermal   |            |
| Measurement of IAM (0° - 70°).....   | 570        |
| Incidence Angle Modifier PV (IAM), photovoltaic  |            |
| Measurement of IAM (0° - 70°).....   | 570        |
| Glass base package ST, solar thermal   |            |
| Glass base package I ST (Transmission spectrum I ST + IAM-ST) .....  | 1'030      |
| Glass base package II ST (Transmission spectrum II ST + IAM-ST) .....                                      | 1'030      |
| Glass base package PV, photovoltaic  |            |
| Glass base package I PV (Transmission spectrum I PV + IAM-PV).....   | 2'070      |
| Certification of solar glass (SPF procedure)   |            |
| for solar thermal application, SPF certification scheme .....  | 3'440      |
| for PV application, according to the SPF certification scheme .....  | 4'480      |
| Combo package for solar thermal and PV application.....  | 5'740      |
| <b>Absorber, Absorber coatings</b>   |            |
| Absorptance, Reflectance (maximum sample size 300 x 200 mm)  |            |
| Spectrally resolved 0.30 $\mu\text{m}$ – 19 $\mu\text{m}$ , Determination of $\alpha$ and $\epsilon$ ..... | 570        |
| <b>Others</b>  |            |
| Thermography   |            |
| Thermographic pictures: camera + operator (per hour).....  | 200        |
| Spectroscopy, wavelength range 0.29 $\mu\text{m}$ – 2.5 $\mu\text{m}$                                      |            |
| Tailor made measurements .....   | on request |
| Light-scattering measurement for all surfaces (BSDF, BRDF, BTDF)   |            |
| Standard measurement.....  | 570        |
| With light trap (optional for glass).....  | 650        |

## Material tests

|  | <b>EUR</b> |
|--|------------|
| <b>Insulations</b>   |            |
| Assessment of outgassing behaviour   |            |
| Temperature resistance (basic test).....   | 700        |
| Temperature resistance + Analysis of effect on antireflective glazings .....           | 1'160      |
| <b>Absorber, Absorber coatings</b>   |            |
| Assessment of ageing stability of absorber coatings, according to ISO 22975-3 (Task-X) |            |
| Test of stability against temperature and humidity .....                               | 10'000     |
| <b>Compensators, Connectors, Fittings</b>  |            |
| According to the SPF certification scheme.....   | 2'400      |

## Systems, collectors and thermal storages

| Collectors (EN 12975, ISO 9806, Solar Keymark, SRCC,...)                  | EUR        |
|---|------------|
| Performance according to ISO 9806 (LP) .....                              | 3'500      |
| Durability test according to ISO 9806 (QP) .....                          | 5'600      |
| Collector base package: Complete test according to ISO 9806, (LP+QP)..... | 6'400      |
| Surcharge for evacuated tube collectors .....                             | +1'000     |
| Surcharge for heatpipe collectors.....                                    | +500       |
| Surcharge for WISC collectors .....                                       | +2'000     |
| Surcharge for In-roof collectors with flashing .....                      | +800       |
| Surcharge for PVT collectors .....  | +1'800     |
| Surcharge for large collectors .....                                      | on request |

### Systems (EN12976, Solar Keymark, SRCC,...)

#### Thermosiphon systems

|  |        |
|--|--------|
| Performance measurement according to EN 12976 (LP).....                        | 6'400  |
| Durability test according to EN 12976 (QP).....                                | 2'600  |
| Thermosiphon base package*: Complete test according to EN 12976, (LP+QP) ..... | 7'100  |
| Combi Pack (Thermosiphon base package + Collector base package) .....          | 11'900 |
| *Surcharge for non-tested collectors   |        |
| Collectors which cannot be tested separately .....                             | 1'700  |
| Collectors which can be tested separately .....                                | 4'500  |

#### Systems for domestic hot water (SDHW)

|  |        |
|--|--------|
| Performance test according to EN12976 (LP).....                      | 7'700  |
| Durability test according to EN12976 (QP).....                       | 2'900  |
| SDHW Base package: Complete test according to EN12976, (LP+QP) ..... | 8'900  |
| CombiPack (SDHW Base package + Collector base package).....          | 13'800 |

### Stratification efficiency of thermal storage tanks (SPF test procedure No 86)

|                             |       |
|-----------------------------|-------|
| Standard Combi Storage..... | 5'800 |
|-----------------------------|-------|

### Standing loss for Energy Labelling (EN 12977-3, EN 12897, EN 15322, EN 60379)

|  |       |
|--|-------|
| Standard Storage .....                                   | 3'000 |
| If ordered together with stratification efficiency ..... | 1'300 |

## Impact resistance, hail testing (APIB)

Impact resistance of all materials and components of the building shell..... on request

## High snow load for PV and ST collectors (APIB)

|   |       |
|---|-------|
| Snow Load testing for solar thermal (up to 13'000 Pa) ..... | 7'000 |
| Snow Load testing for PV modules (up to 13'000 Pa).....     | 9'000 |

## General remarks

The price list gives an overview about our standard tests and services. The available infrastructure for testing and measuring components allows for much more. Let us know about your requirements, your demands and your wishes so that we can offer a custom made solution.

The indicated prices are without VAT.

SPF reserved its right to offer services for differing prices.

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