Minutes of the second project team meeting:

Participants:

Arbeitsgemeinschaft für Waerme- und Heizkraftwirtschaft - AGFW e.V.
Besier, Rolf
Bayer MaterialScience AG:
Reichert, Dr. Peter
Bohlen & Doyen Polska Sp. Z o. o.:
Behrends, Erwin; Schnau, Marc
Centro Sviluppo Materiali Spa.:
Bulfani, Andrea
Mannesmann Fuchs Rohr GmbH:
Brauer, Dr. Holger
Salzgitter Mannesmann Forschung:
Hilgert, Oliver; Kaack, Dr. Michael; Zimmermann, Dr. Steffen
Stepanski Engineering
Stepanski, Dr. Horst
Sika Danmark A/S:
Burchardt, Dr. Bernd; Rasmussen, Lou V.
LWF – University of Paderborn, coordinator:
Boeddeker, Tobias; Wissling, Matthias

Agenda:

TOP 1: Welcome and introduction
TOP 2: Research results of project partners
- LWF
- Salzgitter Mannesmann Forschung GmbH
- Mannesmann Fuchs Rohr GmbH
- Sika Danmark A/S
- Centro Sviluppo Materiali Spa
- AGFW e.V.
- Gas de France
- Bohlen & Doyen Polska Sp. Z o.o.

TOP 3: Presentation of Bayer MaterialScience AG
TOP 4: Discussion regarding tests, types of specimens
TOP 5: Administration of the project
TOP 6: Next steps / miscellaneous

TOP 1: Welcome and introduction

After Mr. Boeddeker welcomed the participants on the meeting, Mr. Besier introduces the AGFW e.V. and gives a short overview over the main activities his organisation treats with.

TOP 2: Research results of the project partners

Mr. Boeddeker presents the research results of the LWF. Fundamental adhesive tests using differential scanning calorimetry and dynamical mechanical analyses were performed. To determine the maximum shear-stresses and maximum shear-strains of the adhesives, tests using a thick tensile specimen were performed. Dr. Zimmermann presents calculations of the loads that will be applied on the pipes during testing and service life.

TOP 3: Presentation of Bayer MaterialScience AG

As a new member of the project team, Dr. Peter Reichert from Bayer MaterialScience AG presents his company and points out its main fields of activity and the benefit to the project JoinTec a participation of Bayer MaterialScience AG would have.

TOP 4: Discussion regarding tests, types of specimens

Adhesion:

The adhesion characteristic of the adhesives on different treated surfaces has to be determined in laboratory tests. These tests will be performed by Sika Danmark A/S.

Adhesive:

For designing an adequate adhesive, the stress and strain distribution in the adhesive layer of the pipe joint has to be calculated by the University of Paderborn. The project team postulates, that the stresses in the adhesive layer should not be higher than 10 MPa. Depending on the results, Sika Danmark A/S will develop an adequate adhesive.

Aging:

Tests should be performed, which cover the needs from the pipe industry. Therefore, additional consultations with the AGFW e.V. and Mannesmann Fuchs Rohr GmbH are necessary to identify the appropriate testing methods.

Application:

It has to be clarified which application (water transport, gas transport) of adhesively bonded pipes can be implemented. Therefore, it has to be pointed out, how gas proofness and water proofness of the pipes can be tested. In addition, an application of the adhesively bonded pipes could be as a cable channel. It has to be assured that any kind of application has no negative effect on the adhesively bonded joint.

Coatings:

The project team points out, that several tests without coating and with different coatings, e.g. epoxy coating systems and polyurethane coating systems should be performed. After analysing the test results a decision has to be made whether uncoated or coated materials will have a better performance with regard to adhesive bonding and commercial aspects. Sika Danmark A/S will perform tests to analyse the adhe-

sion behaviour of adhesives on different, commercially available coatings. Bayer MaterialScience AG checks what kind of coatings they can offer for first adhesion tests.

Material for specimens:
It was also ascertained that steel direct cut off from pipes should be used for analyses according to the testing standards for steel pipes. For tests concerning gap-filling, optimisation of joint-design and for first strength tests, small precision pipes will be used. Salzgitter Mannesmann Forschung GmbH offers to obtain the needed pipes for the project.

Pipe joint design:
The pipes will be butt-jointed. A sleeve will be put over the joint. The gap between the pipes and the sleeve has to be filled with adhesive. This design will be more detailed within the near future. To avoid stress peaks, the transitions between the sleeve, the adhesive and the pipe have to be smooth.

Pipe laying:
The highest loads on the pipes occur during the pipe laying process. The project team discusses if it is possible to bond the pipes directly in the trench. Mr. Schnau states that this practice would have a negative economical effect because trenches with a larger width would be necessary.

Sealings:
It has been pointed out that sealings have to be used to separate the medium from the adhesive layer.

Types of specimens
Small scaled pipes specimens should be used to evaluate the strength of adhesively bonded pipe connections.

TOP 5: Administration of the project

Time sheets:
Mr. Boeddeker annotates that time sheets, containing information about how many hours the project partners worked on which working package have to be prepared by each project partner. This information is needed for the mid-term report which is accompanied by a project-auditing.

Six-monthly report:
The first six-monthly report has to be edited and sent to the European Commission. Therefore, Mr. Boeddeker asks every project partner to deliver the information needed to prepare the report.

Consortium agreement:

Mr. Boeddeker suggests to set up a consortium agreement that rules in detail the commercial exploit of new patents generated in this project. This agreement rules simultaneously the liability of the project partners. Mr. Boeddeker supposes to check the model consortium agreement prepared by DESCA by the legal departments of the project partners and to give him feedback about the acceptance.

TOP 6: Next steps / miscellaneous

The next meeting of the JoinTec project team will take place in Hamm on the 25th June 2008 at Mannesmann Fuchs Rohr GmbH.