

THE EUROPEAN MARKET FOR THERMAL INSULATION PRODUCTS

Volume 1 - Germany

**© IAL CONSULTANTS
JULY 2002**

109 Uxbridge Road, Ealing, London W5 5TL
Tel: +44 (0) 20 8832 7780 Fax: +44 (0) 20 8566 4931
Email: ial@brg.co.uk
Web site: www.ialconsultants.com

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the copyright owner.

NOTE

The information given in this report has been compiled from published sources and interpreted from fieldwork based on informed opinions. Whilst every care has been taken in the preparation of the report, there may have been some errors in the information obtained. Although it is impossible to verify every single detail by cross checking, we believe the general picture provided is reasonably accurate and comprehensive.

Many IAL reports contain an overview of selected company financial information and capabilities based on published sources where available. Although the companies represented are believed to be the major suppliers the profiles are meant to be indicative rather than definitive.

It is fundamental to the philosophy of IAL Consultants to constantly seek to extend and improve our service to clients. In pursuit of these aims, we shall be pleased to consider all requests for regular or periodic updating of all or any part of the information contained in this report, or for extensions in coverage in terms of product areas, market sectors and/or geographic regions.

We are, of course, always happy to discuss with any subscriber the possibility of undertaking further work, whether arising out of this report or in different business areas.

MORE INFORMATION ON IAL CONSULTANTS

At the end of this report you will find a copy of our corporate brochure and a list of our latest published reports. Should you require more information on either our published reports or our private client services, please contact us at the address given.

Full details on all IAL Consultants published studies (including full tables of contents and tables of tables) and ad-hoc research services can be found on our website :

www.ialconsultants.com

CONTENTS

| | |
|--|-----------|
| 1. INTRODUCTION..... | 1 |
| 1.1 SCOPE OF THE STUDY | 1 |
| 1.2 METHODOLOGY..... | 1 |
| 1.3 PRODUCTS COVERED | 1 |
| 1.3.1 Mineral Fibres | 1 |
| 1.3.2 Expanded Polystyrene (EPS) | 2 |
| 1.3.3 Extruded Polystyrene (XPS)..... | 2 |
| 1.3.4 Polyurethane Foams | 2 |
| 1.3.5 Perlite..... | 3 |
| 1.3.6 Microporous Silica..... | 4 |
| 1.3.7 Vermiculite..... | 4 |
| 1.3.8 Foam Glass | 4 |
| 1.3.9 Calcium Silicate | 5 |
| 1.3.10 Ceramic Fibres | 5 |
| 1.3.11 Phenolic Foams..... | 5 |
| 1.3.12 Flexible Insulation | 6 |
| 1.4 END-USE SECTORS | 6 |
| 1.4.1 Building..... | 6 |
| 1.4.2 Industrial..... | 7 |
| Pipe lagging..... | 7 |
| Process Plant and Machinery..... | 7 |
| Domestic and Commercial Appliances..... | 7 |
| Transport | 7 |
| 1.5 PRICES | 7 |
| 1.6 UNITS OF VOLUME..... | 9 |
| 1.7 FORECASTS | 11 |
| 2. MARKET SUMMARY AND FORECASTS TO 2006 | 13 |
| 2.1 MARKET REVIEW – 2001 | 13 |
| 2.2 MARKET FORECAST – 2006..... | 16 |
| 3. MARKET REVIEW | 19 |
| 3.1 THE MARKET BY MATERIAL TYPE - 2001-2006..... | 19 |
| 3.2 THE MARKET BY END-USE APPLICATION - 2001-2006 | 22 |
| 3.3 THE MARKET IN BUILDING & INDUSTRY – 2001..... | 24 |
| 3.4 GROWTH IN THERMAL INSULATION CONSUMPTION BY MATERIAL TYPE, 2001-2006 | 27 |
| 3.5 GROWTH IN THERMAL INSULATION CONSUMPTION BY END-USE, 2001-2006 | 29 |
| 4. MARKET INFLUENCES | 31 |
| 4.1 MACROECONOMIC TRENDS | 31 |
| 4.2 MATERIAL TRENDS AFFECTING THE GERMAN INSULATION MARKET | 32 |
| 4.2.1 Mineral Fibre..... | 32 |
| 4.2.2 Expanded Polystyrene..... | 33 |
| 4.2.3 Extruded Polystyrene | 33 |
| 4.2.4 PUR/PIR..... | 33 |
| 4.2.5 Perlite..... | 34 |
| 4.2.6 Foam Glass | 34 |
| 4.2.7 Ceramic Fibres | 34 |
| 4.2.8 Vermiculite..... | 34 |
| 4.2.9 Phenolics..... | 34 |
| 4.2.10 Calcium Silicate | 35 |
| 4.2.11 Microporous Silica..... | 35 |
| 4.2.12 Flexible Insulation ENR & PE..... | 35 |

| | | |
|-----------|--|-----------|
| 4.3 | ENVIRONMENTAL FACTORS AFFECTING THE USE OF THERMAL INSULATION PRODUCTS | 35 |
| 4.3.1 | <i>CO₂ Emission</i> | 35 |
| | EnEV - The Energy Saving Ordinance | 36 |
| 4.3.2 | <i>Blowing Agents</i> | 37 |
| 4.3.3 | <i>Pipe-in-pipe Insulation</i> | 39 |
| 4.3.4 | <i>In-situ Refrigeration</i> | 39 |
| 4.3.5 | <i>Eco-labelling and Passive Housing Development</i> | 40 |
| 4.3.6 | <i>EU Fire Classification</i> | 41 |
| 5. | SUPPLIERS AND MANUFACTURERS OF THERMAL INSULATION PRODUCTS | 43 |
| 5.1 | MARKET SHARES OF LEADING INSULATION SUPPLIERS | 43 |
| 5.2 | PROFILES OF KEY EUROPEAN SUPPLIERS | 46 |
| 5.2.1 | <i>Armacell</i> | 46 |
| 5.2.2 | <i>BASF</i> | 48 |
| 5.2.3 | <i>Bayer</i> | 51 |
| 5.2.4 | <i>Dow Chemical</i> | 54 |
| 5.2.5 | <i>Heraklith AG (RHI AG)</i> | 57 |
| 5.2.6 | <i>Kingspan</i> | 59 |
| 5.2.7 | <i>KnaufAlcopor</i> | 62 |
| 5.2.8 | <i>Pfleiderer</i> | 64 |
| 5.2.9 | <i>Recticel</i> | 67 |
| | Summary of Operations | 67 |
| | Performance | 68 |
| | Product Range | 68 |
| | Production Sites | 69 |
| 5.2.10 | <i>Rockwool</i> | 70 |
| 5.2.11 | <i>Saint Gobain</i> | 73 |
| 5.3 | DIRECTORY OF SUPPLIERS | 75 |
| 5.3.1 | <i>Calcium Silicate</i> | 75 |
| 5.3.2 | <i>Ceramic Fibre</i> | 75 |
| 5.3.3 | <i>Expanded Polystyrene</i> | 75 |
| 5.3.4 | <i>Extruded Polystyrene</i> | 78 |
| 5.3.5 | <i>Flexible Insulation (ENR)</i> | 78 |
| 5.3.6 | <i>Flexible Insulation (PE)</i> | 79 |
| 5.3.7 | <i>Foam Glass</i> | 79 |
| 5.3.8 | <i>Microporous Silica</i> | 79 |
| 5.3.9 | <i>Mineral fibre</i> | 79 |
| 5.3.10 | <i>Perlite</i> | 81 |
| 5.3.11 | <i>PU/Polyisocyanurate</i> | 81 |
| 5.3.12 | <i>Vermiculite</i> | 86 |
| 6. | SOURCES OF INFORMATION | 87 |
| 6.1 | AUSTRIA | 87 |
| 6.2 | BELGIUM | 87 |
| 6.3 | DENMARK | 87 |
| 6.4 | FINLAND | 87 |
| 6.5 | FRANCE | 87 |
| 6.6 | GERMANY | 88 |
| 6.7 | ITALY | 88 |
| 6.8 | NORWAY | 89 |
| 6.9 | SPAIN | 89 |
| 6.10 | SWEDEN | 90 |
| 6.11 | SWITZERLAND | 90 |
| 6.12 | UNITED KINGDOM | 90 |
| 7. | ACKNOWLEDGEMENTS | 93 |

TABLE OF TABLES

| | |
|---|-----------|
| 1. INTRODUCTION..... | 1 |
| 1.1 SCOPE OF THE STUDY | 1 |
| 1.2 METHODOLOGY..... | 1 |
| 1.3 PRODUCTS COVERED | 1 |
| 1.4 END-USE SECTORS | 6 |
| 1.5 PRICES | 7 |
| Prices Used, €/m ³ (2001) | 8 |
| 1.6 UNITS OF VOLUME..... | 9 |
| Densities Used, kg/m ³ (2001) | 10 |
| 1.7 FORECASTS..... | 11 |
| 2. MARKET SUMMARY AND FORECASTS TO 2006 | 13 |
| 2.1 MARKET REVIEW – 2001 | 13 |
| Total German Thermal Insulation Market Volume by Type and End-use, 2001 (m ³)..... | 13 |
| Total German Thermal Insulation Market Volume by Type and End-use, 2001 (Tonnes)..... | 14 |
| Total German Thermal Insulation Market Value by Type and End-use, 2001 (€ Million)..... | 15 |
| 2.2 MARKET FORECAST – 2006..... | 16 |
| Total German Thermal Insulation Market Volume by Type and End-use, 2006 (m ³)..... | 16 |
| Total German Thermal Insulation Market Volume by Type and End-use, 2006 (Tonnes)..... | 17 |
| Total German Thermal Insulation Market Value by Type and End-use, 2006 (€ Million)..... | 18 |
| 3. MARKET REVIEW | 19 |
| 3.1 THE MARKET BY MATERIAL TYPE - 2001-2006..... | 19 |
| The German Thermal Insulation Market by Type, 2001-2006 (m ³) | 19 |
| The German Thermal Insulation Market by Type, 2001-2006 (Tonnes)..... | 20 |
| The German Thermal Insulation Market by Type, 2001-2006 (€ Million)..... | 21 |
| 3.2 THE MARKET BY END-USE APPLICATION - 2001-2006 | 22 |
| The German Thermal Insulation Market by End-use, 2001-2006 (m ³) | 22 |
| The German Thermal Insulation Market by End-use, 2001-2006 (Tonnes)..... | 22 |
| The German Thermal Insulation Market by End-use, 2001-2006 (€ Million)..... | 23 |
| 3.3 THE MARKET IN BUILDING & INDUSTRY – 2001..... | 24 |
| The German Market for Thermal Insulation in Building and Industry, 2001 (m ³)..... | 24 |
| The German Market for Thermal Insulation in Building and Industry, 2001 (Tonnes)..... | 25 |
| The German Market for Thermal Insulation in Building and Industry, 2001 (€ Million)..... | 26 |
| 3.4 GROWTH IN THERMAL INSULATION CONSUMPTION BY MATERIAL TYPE, 2001-2006..... | 27 |
| % Growth Rates for Thermal Insulation by Material Type in Germany, 2001-2006 (m ³)..... | 27 |
| % Growth Rates for Thermal Insulation by Material Type in Germany, 2001-2006 (Tonnes)..... | 28 |
| 3.5 GROWTH IN THERMAL INSULATION CONSUMPTION BY END-USE, 2001-2006 | 29 |
| % Growth Rates for Thermal Insulation by End-use in Germany, 2001-2006 (m ³)..... | 29 |
| % Growth Rates for Thermal Insulation by End-use in Germany, 2001-2006 (Tonnes)..... | 29 |
| 4. MARKET INFLUENCES..... | 31 |
| 4.1 MACROECONOMIC TRENDS | 31 |
| Construction Volume in Germany by Type, 2001-2004 (Billion Euros)..... | 31 |
| 4.2 MATERIAL TRENDS AFFECTING THE GERMAN INSULATION MARKET | 32 |
| 4.3 ENVIRONMENTAL FACTORS AFFECTING THE USE OF THERMAL INSULATION PRODUCTS..... | 35 |
| Proposed Global Ceilings for HCFC Production..... | 38 |
| Proposed EU Ceiling of HCFC Consumption in PU Foams..... | 38 |
| 5. SUPPLIERS AND MANUFACTURERS OF THERMAL INSULATION PRODUCTS | 43 |
| 5.1 MARKET SHARES OF LEADING INSULATION SUPPLIERS | 43 |
| Leading German Suppliers of Thermal Insulation..... | 43 |
| 5.2 PROFILES OF KEY EUROPEAN SUPPLIERS | 46 |
| BASF Group Sales by Region, 2000-2001(Million Euros) | 49 |
| BASF Group Sales by Business Segment, 2000-2001 (Million Euros)..... | 49 |

| | | |
|-----------|--|-----------|
| | Bayer Group Sales by Business Segment, 2000-2001 (Million Euros) | 52 |
| | Bayer Group Sales by Region, 2000-2001 (Million Euros) - by market..... | 52 |
| | Bayer Group Sales by Region, 2000-2001 (Million Euros) - by point of origin | 52 |
| | The Dow Chemical Company Group Sales by Region, 2000-2001(US\$ Million) | 55 |
| | The Dow Chemical Company Group Sales by Business Segment, 2000-2001(US\$ Million)..... | 55 |
| | RHI's Sales by Division, 2000-2001(Million Euros)..... | 58 |
| | Pfleiderer's Sales by Division, (€ million)..... | 65 |
| | Recticel International: Net Sales by Business Segment, 2000-2001 (Million Euros) | 68 |
| | Rockwool Sales by Region, 2000-2001 (Million Euros) | 71 |
| 5.3 | DIRECTORY OF SUPPLIERS | 75 |
| 6. | SOURCES OF INFORMATION..... | 87 |
| 6.1 | AUSTRIA | 87 |
| 6.2 | BELGIUM | 87 |
| 6.3 | DENMARK | 87 |
| 6.4 | FINLAND | 87 |
| 6.5 | FRANCE | 87 |
| 6.6 | GERMANY | 88 |
| 6.7 | ITALY | 88 |
| 6.8 | NORWAY | 89 |
| 6.9 | SPAIN | 89 |
| 6.10 | SWEDEN | 90 |
| 6.11 | SWITZERLAND | 90 |
| 6.12 | UNITED KINGDOM..... | 90 |
| 7. | ACKNOWLEDGEMENTS..... | 93 |
