

The Development of Climatex® Lifecycle™; Compostable, Environmentally Sound Upholstery Fabrics and the Next Generation of Climatex® LifeguardFR™ Upholstery Fabrics; Flameretardant, Safe for Biological Cycles, enabling a new Dimension in Product Safety (Fireprotection, Safe for Humans, Safe for the Environment) (19)

After 1980, the European Textile Industry, especially in Germany and Switzerland, suffered an enormous decline. A large number of companies closed their businesses because severe competition drove selling prices downward. In addition, textile firms faced more stringent environmental regulations and costs for emissions to air, noise, and wastewater.

Rohner Textil AG, a textile company located in the Rhine Valley near St. Gallen and Lake Constance, Switzerland, faced these market conditions. The firm had 30 people by 2000 and manufactured high-end designs of upholstery fabrics. The firm created new designs in-house and also worked with outside designers. It dyed yarns in its dye facility, and it produced textiles in its weaving mill. Many of Rohner's customers, such as Designtex, Herman Miller, Giroflex, Girsberger, Sitag, JAB Anstoetz, Team 7, had international recognition.

In addition to facing productivity and waste emissions issues common to the textile industry in the 1980's, Rohner faced additional local challenges. The company was located in a building that was constructed in 1911 and had historical building status, a condition that subjected the firm to scrutiny for architectural changes. The building was situated in a neighbourhood was both a residential and a small business district. The firm was subjected to strict noise restrictions that if violated, resulted in having night shifts banned. These noise restrictions also hampered efforts at improving productivity because newer, higher capacity looms generated more vibrations, which would be transmitted throughout the neighbourhood through the air and, more importantly, through the clay on which the mill and residential structures were built. The firm already had to decide to eliminate the use of cotton from its product line because the cotton dyes would have required Rohner to install special wastewater treatment equipment. Moving the firm was not an economically acceptable option. By 1989 Rohner, like other firms, was facing an increasingly complex situation involving economic and environmental requirements.

In 1992 the company set out on a new strategy: to move from reactive to proactive management. The first step involved subjecting all of Rohner's products to tests to obtain the Eco-label, Oeko-Tex Standard 100. Rohner's products passed these tests; however the tests did not resolve all of the environmental issues involved with the dyeing process and other manufacturing processes, as only the remaining chemical compounds in the finished products were analyzed.

The severe market conditions in the early 1990's forced the companies to boost investments in new equipment to increase productivity. These investments left little margin for resources for investments to offset increasing governmental regulations in air pollution, wastewater treatment, noise reduction, solid waste disposal, and resource efficiency. At the time, the business community focused on profit, market positioning, quality, return on investment, just in time, inventory management, competitiveness, and globalization.

It was in this context that Rohner Textil built a strategy to balance the values in economy and ecology in order to survive as a company. Rohner articulated this strategy in its internal management document system, *Eco-Eco Concept 1993 – 2000* (1). At the heart of the challenge was looking for a way to allocate funds for investments in ecological efforts while simultaneously investing in new equipment for productivity gains. Over 10% of Rohner's turnover had to be invested in new equipment to increase competitiveness. There were few resources to spare for the ecological initiatives. The noise and historic building restrictions also needed to be satisfied.

Management at Rohner Textil struggled with these questions: How can management convince the board of a company to accept investments in environmental projects in addition to the productivity investments of over 10% annually over the next 8 years? Was it management's job to change the board's thinking so that it conformed according to an environmental ideology? Would it be better to make special agreements with governmental institutions? What are responsible actions that the board should take?

The solution lay in finding a solution in the common language of the business: economic advantage. Rohner's tax consultant discovered that the canton St. Gallen provided special tax treatment for depreciation of capital related to environmental investments. This tax incentive provided Rohner's management with its justification for environmental investments, and Rohner Textil's board agreed to them. Investments had to be planned ahead of time. Beginning in 1993 Rohner included environmental investments in its annual budgets. The investment amount consisted of one-percent of the total budget. In addition, an environmental cost was included in calculating the cost of producing the product. The existing accounting systems were modified to incorporate these two measures. The first environmental investments were realised in 1995. (2)

During this time management recognised another necessity: the transparency of its environmental factors to achieve a clear understanding resulting in improved management decisions and better management tools. The company conducted an inventory and analysis of its environmental factors, and each department measured and catalogued its environmental problems. Each department also proposed solutions and set priorities for implementing the solutions. Rohner Textil certified its quality management according to the ISO 9001 system during 1994.

The company needed to understand the interactions of its systems in order to make its solutions effective. As an extension, management realised it needed to encourage transparency about what its products were made of. Rohner Textil developed Eco-Controlling, a quantitative assessment of each product's overall environmental impact, on all its products to promote a long-term ecological product development focus for their entire product line, enabling the R&D department to focus more on environmental issues. (3)

Customer reactions followed these initiatives. Susan Lyons, Design Director of the firm Designtex, Inc., a subsidiary of Steelcase, Inc. and located in New York, approached Rohner in the fall of 1993, as her investigations on environmentally sound textiles did not give her many other alternatives. Lyons requested that Rohner collaborate with DesignTex, architect William McDonough, and chemist, former Greenpeace activist, and head of the Hamburg-based EPEA Internationale

Umweltforschung GmbH, Prof. Dr. Michael Braungart. Lyons proposed that the team develop an "environmentally intelligent" line of textiles, the vision for the project.

Design Vision (4) (9) (14) (15) (19) (20)

The vision of the next industrial revolution, the clean revolution (4) (9)

William McDonough and Prof Dr. Michael Braungart developed in 1992 criteria for a definition of environmentally sound products and production as well as a definition of a concept for „intelligent products“.

The three principles of nature

3 characteristics can be learnt from nature and their building of things:

„waste equals food“

All materials given to us by nature are constantly returned to the earth without the concept of waste as we understand it. Everything is cycled constantly with all waste equaling food for other living systems.

„use current solar income“

The factor allowing nature to continually cycle itself through life is energy and this energy comes from the outside the system in the form of perpetual solar income.

„respect biodiversity“

The creation of biodiversity sustains the complex and efficient system to survive.

The intelligent product system

The intelligent product system consists of two strategies for closing material loops and one strategy for non saleable products.

a) „consumable products“ – „organic nutrients“

Are defined products being conducted in biological cycles: with natural, renewable resources which document environmental soundness along the whole lifecycle of a product, they are designed to be conducted into biological cycles after use.

William McDonough and Michael Braungart state that the word „waste“ should be removed from our vocabulary and the word „product“ should be used instead. If waste equals food, it must also be a product.

„service products“ – „technical nutrients“

Are defined products being conducted in technical cycles. Raw materials of no renewable resources which document environmental soundness along the whole

lifecycle of a product, they are designed for disassembly, remanufacture, and continuous re-use.

William McDonough and Michael Braungart quote that the customers only want to buy the service the product provides. To eliminate the concept of waste, service products would not be sold, but effectively leased to the end-user. It is „food“ for an industrial system, because the products, materially still owned by the product manufacturers, are designed for reuse of materials in future products of equivalent quality.

„non saleable products“

They are basically waste, especially dangerous waste, like radioactive materials or materials susceptible to release dangerous chemicals substances like dioxins to the environment.

William McDonough and Michael Braungart say, that these products must not only cease to be sold, but those already sold should be stored in warehouses when they are finished until we can figure out a safe, non toxic way to dispose them.

Product Redesign for nature – sustainable design: beyond recycling (9)

The development of **Climatex®Lifecycle™**, an environmentally sound produced upholstery fabric to be conducted into biological cycles by composting presented a perfect opportunity to demonstrate a redesign process.

Sustainable Design

The process began with the examination of raw materials used in a previous design from the Rohner product, Climatex®. This product, originally developed in 1988 with climate control seating features, contains wool, ramie and polyester, materials with properties for humidity absorption and transport. According to the Intelligent Product System™ and the McDonough Braungart Design Protocol™, this combination was neither a biological nor a technical nutrient and therefore presented an opportunity for redesign.

Step One: The fibers

Ramie, a plant similar to linen, was found to be an excellent alternative to polyester in Climatex® fabrics. When combined with wool, another natural fiber, the resulting fabric transported moisture away from the skin, allowing a person to remain comfortable when seated for a long period of time. This patented process is registered under the brand name Climatex®Lifecycle™.

Step Two: The dyes and textile auxiliary chemicals (5)

Michael Braungart, his assistant Dr. Alain Rivière, and their associates at EPEA requested 60 major chemical suppliers to submit to them information relating to their dye chemicals and auxiliaries. They were unwilling to open their books to

share the information on their deep chemistry – except Ciba, which co-operated with the requests. From the information submitted on about 1600 dye chemicals, Braungart and EPEA selected 16 dye chemicals according to the guidelines of their design criteria, which addressed effects on human health and the environment. These design criteria include a requirement that the chemicals selected for the product must be free of negative impacts like mutagenicity, carcinogenicity, accumulation in bodies and food chains or persistent toxins, heavy metals and endocrine disruption.

The approved chemicals also performed well according to industry standards for upholstery fabrics such as light fastness, rub test durability, perspiration test durability, and manufacturing process colour reproducibility. All colours, with the exception of black, could be developed from the 16 dyes selected.

Step Three: The Manufacturing (6)(7)(8)(9)(16)(17)(18)(19)(20)

The team needed to overcome many additional hurdles, and in some cases unorthodox solutions were adopted. McDonough, Braungart and their colleagues at EPEA conducted a comprehensive assessment of:

- **Raw materials**, the agricultural production of fibers and their extraction and purification.
- **Spinning mill processes** and auxiliaries, which were approved by the EPEA or not used at all for Ramie.
- **Twisting mill processes**, for which no auxiliaries were used.
- **Yarn dyeing procedures**, with waste water analyses and water and energy reduction programs approved by EPEA. (16) (17)
- **Weaving techniques**, with no coating of the warp yarns, and the use of water instead and spinning and twisting alternatives to strengthen the yarns for the weaving process.
- **Finishing processes**, no chemicals used during finishing process, not even washing chemicals.

In addition, the environmental management system of Rohner was certified according to **ISO 14001 and EMAS**, in 1996 as one of the first 150 companies in Europe. (18)

Step Four: The final product

It took eighteen months of research to create this product, which is highly optimised with respect to the minimization of material streams, with respect to the goal to close biological cycles, and with respect to health soundness. The final product, Climatex®Lifecycle™, is competitive with standard upholstery fabrics in terms of:

- **Aesthetic Criteria** : any design and most colours can be constructed.
- **Industrial Technical Criteria**: all performance tests are met or exceeded.
- **Cost Criteria**: same price as other high end products with similar raw materials.

- **Function Criteria:** climate control seating (successfully used in extreme conditions, such as in gliders).
- **Environmental soundness:** safe for biological cycles and environmentally sound

Upon introduction at the Solomon Guggenheim Museum of the finished product to the marketplace, William McDonough commented in his speech to architects and interior designers

"This is the first product of the Next Industrial Revolution." What we are now saying is that environmental quality can be an integral part of the design of every product. It's no longer just a wishful option."

Step Five: Beyond Recycling: The Felt (9) (10) (11)

Even with the environmental optimizations associated with Climatex® Lifecycle™, the production process still generates remaining materials, especially solids. In the case of textiles, this occurs in the form of trimmings on both sides of the fabric and of cutting of the seat covers. This solid waste is being manufactured into felt for upholstery interliners or mulch-felt for gardening strawberry plants. The felt fulfills first a function as weed control while it slowly degrades. After degradation it is a perfect fertilizer for the next gardening season according to an old farmer's saying: "Hair and Nail fertilize your ground for seven years."

Step Six: Ready for Nature

According to the „McDonough Braungart Design Protocol™“ of MBDC (McDonough Braungart Design Chemistry), this fabric is designed to be safe for humans and can become safe food for other organisms when it is no longer useful and is "consumed by natural systems". When properly used, the fabric can be returned into biological cycles when removed from a chair frame: it will decompose naturally and return to the ecosystem.

The marketing and communication system

The marketing and communication system had to be developed for the U.S. market and for the European market. Perceptions of different people, such as architects, end users, customers, and the media, had to be taken into consideration for communicating the product and for achieving the credibility of the product. This was accomplished through the sensitive selection of designs and colours in the development for each individual market, as well as in the marketing language and tools. Rohner Textil AG has patented and trademarked Climatex® Lifecycle™.

U.S. Market Concept

In the U.S., Rohner's customer Designtex, decided to use the well-known name of architect William McDonough and his Second Industrial Revolution concept as its marketing tool. The first collection was launched in the fall of 1995.

The collection was called „The William McDonough Collection“, and was released with an informational booklet entitled "Environmentally Intelligent Textiles.“ The collection was launched at the Solomon Guggenheim Museum in New York. At the first office furniture trade exhibition at the Neocon convention in Chicago, the collection received the award, the "best of Neocon.“ In 1996 William McDonough received a Presidential Award from President Bill Clinton for his work in Sustainable Design, and was proclaimed the 1999 Designer of the Year in *Interiors* magazine. McDonough also received recognition in *Time* magazine as a "Hero for the Planet“.

In 1998, Designtex supported the development of a new design tool to improve the environmental soundness of products, an "Index of Sustainability,“ for products designed by McDonough Braungart Design Chemistry (MBDC). In 1999, Designtex and MBDC enabled Carnegie, one of its major business competitors, to market the product and to develop Carnegie's own colours and designs to increase the availability to the design community. The extension to diversify on product designs and customers remains a natural wish of offering choice with fair competitors. All three companies agreed to jointly advertise and market Climatex®Lifecycle™ upholstery fabrics as the "fabric for the future.“ in the U.S. At the 1999 annual Neocon convention in Chicago, Carnegie was awarded "Gold of Neocon“ for its introduction of the Climatex®Lifecycle™ Upholstery Collection. At the Envirodesign 5th Conference in April 2001 Designtex, MBDC and Rohner Textil announced the opening of Climatex®Lifecycle™ to the entire industry. At the same conference it was announced that Rohner Textil has licensed the new generation Climatex® LifeguardFR™ to Victor Innovatex, for the North American OEM Office Furniture market.

European Market Concept

In Europe, Rohner Textil hired a marketing and communication expert, René Eugster, to help the launching of the product in 1996. Upholstery fabric manufacturers are always sub-suppliers to the furniture industry or to the textile merchandisers, as furniture is the final product. Rohner Textil, as a small company, was not able to market the products directly to the end user, due to the complex European Market distribution. Rohner decided to select 16 key customers who had the credible market image or capable technology. Rohner supplied individually customised marketing documentation for the 16 selected customers to enable individual marketing concepts based on common arguments and language. The environmental institute EPEA functioned as the vehicle for communicating environmental values, even though the institute was little known at that time. In Europe, the first collection was launched in the fall of 1996. The press reacted quickly, and within 8 months over 40 newspapers, magazines and TV Channels presented the innovation. Climatex®Lifecycle™ was awarded several design prizes and awards:

- 1996: Arge Alp (Community Alpine Countries) Environmental Award.
- 1997: Support from the NGO „Deutsche Umwelthilfe.“
- 1998: 1st prize in Austria's Eco design contest.
- 1999: iF Ecology Design Award, best of Category, Industrial Forum, Hannover Germany.

- 1999: registration as one of the 450 „world-wide international projects“ for the World expo 2000, Hannover.
- 2000: Silver Innovation Award Rhine Valley
- 2000: Millenium Award for Environmental Achievement ICC/UNEP (International Chamber of Commerce/United Nations Environmental Program)
- 2000: 1st prize £ 40'000 Design Sense Award Design Museum London
- 2001: Nomination Swiss Marketing Trophy
- 2001: Nomination iF Ecology Design Award, Industrial Forum, Hanover
- 2001: 1st prize Design Resources Award
- 2001: UBS Key Trophy to Albin Kälin, Entrepreneur of the year
- 2001: Award Special Efforts for the Environment

In 1999, Rohner established a corresponding web site, www.climatex.com on the Internet.

Internationally reputed museums as well as timely limited exhibitions included Climatex®Lifecycle™ in their displays:

- 1995: Solomon Guggenheim Museum, New York
- 1999: iF Forum Design Hanover
- 2000: World exhibition 2000 Hanover, Living Lakes Concept and iF Forum Design (21)
- 2000 Design Museum London – Winner of Design Sense Award 2000
- 2001 – 2005 Re(f)use – exhibition travelling around the world
- 2001 iF Forum Design Hanover
- 2001 “Swiss Made” Museum für angewandte Kunst, Cologne, Germany
- 2001 – 2002 Design Resources Award, Seattle – Japan - Australia
- 2001 “Gut in Form 1950 + 2000” Museum für Gestaltung Zurich

The path towards a sustainable company (9) (19) (20)

From 1995 to 1998 the implementation of the Eco-Eco Concept 1993 – 2000 at Rohner Textil (balancing economy with ecology) together with the ongoing further development of the product line Climatex®Lifecycle™ took most of the energy of the management team. Rohner Textil agreed to sign again a five-year consulting and design contract with EPEA in order to continue their collaboration. Rohner invested in updated machinery during this period, with new dyeing equipment that possessed environmental advantages and computer integrated manufacturing (CIM) methods at its weaving facility. Productivity increases and the improved economic performance demonstrated the competitiveness of the company. The environmental improvements impressed experts. For example, government officials were surprised that subsequent waste water analyses showed little or no hazards in the waste water

from Rohner, or textile experts were impressed by the efficiencies achieved in the manufacturing processes.

Rohner's management developed several ecological accounting and financial methods and systems for their products and the manufacturing to gain further transparency in managing their environmental agenda. (2) (8) (9)

By 1997, Climatex®Lifecycle™ comprised one third of Rohner's entire production volume, only two years after the product was introduced.

Academic institutions have examined the structure of Rohner's business network . Darden Business School (USA) has issued 8, IMD Lausanne (CH) 2 Case Studies. (1) (2) (3) (5) (6) (8) (12) (13) (20)

In the future, the management of Rohner Textil will continue to demand dramatic improvements in its economic, environmental, and social aspects. Part of this vision has been articulated in its company document, "The Path Towards a Sustainable Company: Rohner Textil 1998 – 2008." The concept articulates such goals as:

- Balancing Economic, Environmental and Social Aspects.
- Implementing an Employee Development Program (EDP) for education, health, and profit sharing.
- Analyzing the entire product line and modifying it to the standards set by Climatex®Lifecycle™.
- Eliminating waste water in the dyeing process.
- Eliminating waste from all of Rohner's products.
- Continuously developing management and accounting systems in order to align a "virtual managementsystem network" (ISO 9001, ISO 14001, EMAS (Environmental Management Auditing System, LCD (Life Cycle Development) versus LCA (Life Cycle Analysis), company concepts, and others).

Conclusions

What matters most is credibility. Climatex®Lifecycle™ embodies the results of 6 years of experience in the ability to create transparency, to ensure consistency and reliability, and to form a network of committed partners . The selection of partners within the network is paramount. Trust, fairness, openness and the ability to change are characteristics the partners must incorporate. Rohner Textil is responsible for building and maintaining this network along the entire supply chain, from the raw material extraction; through the spinning, twisting, and dyeing of the yarns; and through the weaving, finishing, and distribution of the fabrics. In addition the firm must manage several supplier levels for chemical inputs, the producers of the felt, and the recommendations from EPEA and MBDC.

The development process faced many challenges throughout the years. Several suppliers went out of business due to the severe market conditions of the textile industry. Chemical companies resisted co-operating by refusing to open their books. The company needed to come to terms with ISO 14001, the new standard for

environmental management systems. It had to develop new management tools, new environmental accounting methods, new life cycle development processes (defining closed lifecycles in every individual process). The company also had to support the development of MBDC's "Index of Sustainability" design tool, measuring environmental strengths and weaknesses.

These challenges situated the company within a context of innovation and of pioneering. This atmosphere led to the expansion of the network to include universities and NGO's who were interested in overseeing and participating in the process. The challenges also led to new arrangements among competitors: MBDC, Designtex and Carnegie agreed to promote Climatex®Lifecycle™ jointly in the U.S and at the Environdesign5 Conference in April 2001 Designtex announced the "next natural step" to open the product to the entire market. These ways of thinking and acting in business have helped to develop credibility. Respecting and reinforcing the contributions of each network partner while maintaining a common vision and commitment to continuous improvements to satisfy the customers and the environment was and continues to be the strategy.

New Challenges for the future

Product Redesign for safety – sustainable design: beyond limits

Climatex®Lifecycle™ upholstery fabrics, made out of wool and Ramie, are environmentally sound and pass all industrial standards, but only few fire regulations. Fire regulations involving hotels, restaurants, theaters, sport stadiums, offices and residential areas are becoming more complex in the contract furniture business. These regulations currently often vary from country to country especially in transportation applications, such as airplanes, trains and busses. Most products are currently optimized to comply with fire safety standards; however, flame retardant products usually contain chemicals that are in some ways the least compatible with environmental soundness. Regulations are increasingly dictating the necessity to buy materials according to ecological criteria, so the need to resolve this incompatibility is also increasing.

The design team at Rohner Textil has set out in 1996 to address this difficult question and to search for opportunities to meet all fire standards without restrictions on safety of the product line for biological cycles. Rohner Textil has opened a new dimension in ecological product innovation with its development of **Climatex®LifeguardFR™ Redesigned for safety**, an extension of its earlier Climatex Lifecycle™ series. With renewed cooperation with the independent environmental institute EPEA in Hamburg, the Rohner team accomplished the redesign over a period of 4 years.

The Re-Design Process

Step One: The fibers

An existing textile fiber was assessed and optimized for its environmental quality to obtain the fiber Redesigned ViscoseFR™ (US: Redesigned LenzingFR™) together with the renowned fiber manufacturer Lenzing. Rohner Textil owns the exclusivity rights for the modified fiber Redesigned ViscoseFR™, which replaces the Ramie fiber in the previous Climatex®Lifecycle™ products. The patented climate control seating features remain unchanged with the altered fiber blend wool and Redesigned ViscoseFR™.

Step Two: The flame retardant chemical

The flame retardant chemical integrated into the design required the cooperation of Clariant, one of the leading chemical producers. Clariant was asked to open its book on this chemical for the assessment of EPEA. After initial reserve over a period of 2-3 years, Clariant agreed in 1999. However all questions raised by EPEA for understanding the impact of the flame retardant on environment and health could not be answered at that time. Therefore, Clariant, Rohner Textil and EPEA agreed to answer remaining questions by extensive laboratory trials. Rohner Textil and Clariant shared the financial cost of the project and in early 2000 the results documented the high health and environmental quality.

Step Three: The dyes and textile auxiliary chemicals (5)

The positive list of dye chemicals from Ciba developed with EPEA also remained for this new development. The change of raw material resulted in different dye prescriptions and the choices for colors and designs are nearly unlimited, except for brilliant colors and pure black.

Step Four: The manufacturing (6)(7)(8)(9)(16)(17)(18)(19)(29)

Most manufacturing processes and acquired Know-How of Climatex®Lifecycle™ remained for the new redesigned product Climatex®LifeguardFR™. The EPEA conducted comprehensive assessments of:

- **Raw materials**, the agricultural production of wool fibers and their extraction and purification, as well as the ecological redesign of the manmade fiber Redesigned ViscoseFR™.
- **Spinning mill processes** and auxiliaries which are approved by the EPEA
- **Twisting mill processes** and auxiliaries which are approved by the EPEA
- **Yarn dyeing procedures**, with continued waste water analyses and water and energy reduction programs approved by EPEA (16)(17)

- **Weaving techniques**, with no coating of the warp yarns, using the previously developed Know-How for Climatex®Lifecycle™.
- **Finishing processes**, no chemicals used during finishing process, not even washing chemicals.

Step Five: The final product

The result is Climatex®LifeguardFR™ Redesigned for safety, which is made out of wool and the cellulose fiber Redesigned LenzingFR™ based on the renewable resource beech wood. The final product complies with all industrial standards and the most severe flame retardant tests worldwide, even for aircraft. The patented function of climate controlled seating remains intact. The ecologically optimized production processes previously developed for the product line Climatex®Lifecycle™ remain unchanged for the new development. The positive list of environmentally sound chemicals and 16 dye chemicals from Ciba developed with EPEA also remained for this new development. The choices for colors and designs are nearly unlimited, except for brilliant colors and pure black. The prices are comparable to wool products. The environmental institute EPEA confirms the high health and environmental quality of Climatex®LifeguardFR™, its production as well as when closing biological cycles after the period of use.

Beyond limits

Even with the environmental optimizations associated with Climatex®LifeguardFR™, the production process still generates remaining materials. The additional technical features are leading to a differentiated strategy to use the flame retardant benefits in other secondary products:

Step Six: secondary products

Alternative secondary products could be interliner felts for panels or walls, flame retardant isolation materials, woven flame retardant blankets for private use or in public transportation (Night-trains, Airplanes, Busses).

Step Seven: Safe for biological cycles

According to the „McDonough Braungart Design Protocol™ of MBDC and with the scientific analysis and studies of EPEA, this fabric is designed to be safe for biological cycles.

The marketing and communication system

Contract market for office seating

The first collection presented in 2000 together with a marketing concept for the customers was very well received. In the fall of 2000 the first customers launched Climatex®LifeguardFR™ upholstery fabrics at the worlds largest office furniture

exhibition „Orgatec“ in Cologne. The „Deutsche Bundesbank“ specified Climatex® LifeguardFR™ fabrics for their office seating.

Residential market for interior fabrics

„Aesthetics for the future“ the major launch of Climatex®LifeguardFR™ by Johannes Wellmann Textilverlag, one of the leading Editeurs of interior fabrics at the Heimtex exhibition in Frankfurt in January 2001. The Rohner design team developed aesthetics that successfully compete with the highest design standards, implementing all technical and environmental safety rules to manufacture and market a sustainable fabric.

The Licensing Concept (13) „Eco smart Licensing“

The redesign of products needs a new way of thinking that leads to unusual and extended partnerships: Chemical companies, environmental institutes, fiber manufacturers. All become active partners in the textile network: from marketing and communication with the customers through the end consumer; from the involvement of NGO's and Universities; and from the role of the Media to all other interacting participants. Rohner Textil foreshadowed tremendous market opportunities in different market segments. The small company developed the strategy to license the manufacturing and marketing of Climatex®LifeguardFR™ to active global market leaders in different business segments, retaining the segment for residential home interiors and contract to Rohner Textil. By the year 2001, 3 license agreements were signed:

- **Lantal Textiles** with Climatex®LifeguardFR™ for transportation and exclusivity rights for aircraft upholstery fabrics
- **Lady Brasil** with the original Climatex® for office seating in South America.
- **Victor-Innovatex** with Climatex®LifeguardFR™ piece-dyed upholstery and panel fabrics for the OEM office furniture market in North America.

Enlarging the network and implementing the patented and ecological Know-How in manufacturing and marketing together with EPEA manifested an even larger complexity on the project. Rohner Textil has once more demonstrated its capability to bring the right people together for the materialization of this philosophy into a product innovation: **Climatex®LifeguardFR™**. The first licensed products will be launched in June 2001 at the Paris Air show and at Chicago's Neocon.

Lantal Textiles acquired Rohner Textil on Dec.1st 1999 as an independently operating subsidiary “in order to ensure its future and strong innovative spirit.” Lantal Textiles is holding true to the motto, “Never change a winning team.” The company has guaranteed long-serving CEO Albin Kälin's crew the retention of their independence, their brand, patent and licensing rights, as well as their St. Gallen head quarters in Heerbrugg. The international market strategy is based on core competencies: Lantal Textiles deals exclusively with ground transport and aviation fields, while Rohner Textil is responsible for its traditional market segments of objects and furnishings for home and office.

Rohner Textil AG
 CEO
 Albin Kälin
 May, 2001

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