”Putting on the pressure”

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Written by Dr. Andrew Warmington
andreww@maclaren.emap.co.uk

Studsvik™ Polymer

www.studsvik.se/polymer
polymer@studsvik.se

Putting on the pressure

Studsvik Polymer, which describes itself as the world leader in the lifetime engineering of plastic pipes, has recently expanded its laboratories. Andrew Warmington went to see the site

Testing pipes in Studsvik Polymer's laboratory

The expansion in laboratory space at Studsvik Polymer, which should be completed by the end of 1999, cost nearly US$500,000 and was much needed. As company president Mats Ifwarson explained: 'We have had an annual growth rate of 23% during the past four years and are in great need of more space in order to grow'.

With 4,000 testing stations, the SWEDAC-accredited testing laboratory is the world's largest laboratory for testing the service life of polymeric pipe materials, mainly PE, PP, cross-linked polyethylene (XPE) and PB. However, this move is only part of a long-term process, now nearing completion, which is taking Studsvik Polymer from state ownership to an internationalised, fully commercial operation.

Work in the early 1970s with Wirsbro Bruks, a maker of XPE pipes, led to developing expertise in analysing the chemical lifetime of hot water pipes, an area which had received almost no attention before then. Pipe testing began in 1972-73 and has expanded into new areas ever since.

Hot water pipe testing is still a core skill, although the company has worked in many other areas, such as gas distribution pipes for earthquake-prone areas. It is also seeing increasing demands for tests on multi-layer, multi-material pipes (XPE-aluminium-PE, for example), which often have no applicable standards.

For years, Studsvik Material (the name Studsvik Polymer was assumed in 1997) was only partly a commercial operation. Much of its work was academic, done in partnership with KTH, the Royal Institute of Technology in Stockholm, and geared to publication in learned journals. In the 1990s, the state hydropower board, Vattenfall, assumed control of the parent company and gradually disposed of its holding. Especially from 1993, Studsvik Polymer had to focus completely on commercial activities.

The change is evident from the figures. From under US$500,000 in 1993, orders reached US$2.8 million in 1997, while the number of clients climbed from ten to 58. The total number of SEM evaluations carried out to ISO/TR 9080 standards, classifying the long-term hydrostatic strength of PE 80 and PE 100 pipes, grew from 11 to 101 and covered over 50 different polyolefin grades. More than 90% of the company's work is now for non-Swedish companies.

Over half of the customer base is resin producers, including, within Europe, Dow, Borealis, DSM, Solvay and Elenac. Official test results for their materials are available on the company website at www.studsvik.se/polymer/ref.html. Studsvik Polymer also has a thriving business in Japan, where one of its major test results for Tokyo Gas functions is a *de facto* industry standard. The company is now seeking to build up its position in Korea and China.

The obvious gap is that very few pipe producers are customers, other than in XPE pipes, where greater than usual processing knowledge and more different processes are found. Senior project manager Tomas Tränkner explains that the lack of European standards, cost considerations and the conservatism of the pipe producers have been limiting factors.

'Studsvik Polymer is probably unique in being independent,' he says. 'Most of our competitors are either closely related to national gas or electricity generators, like Becetel in Belgium or SKZ in Germany, or they are official testing laboratories, as in France and Spain. Often, there is no incentive for small pipe producers to come to us. We expect this to change when European legislation and standards are better established.'

The parent company, Studsvik, is focused mainly on nuclear energy and has operated test reactors on the Baltic Sea coast south of Stockholm since

Studsvik Polymer's president Mats Ifwarson and laboratory manager Ulrika Andersson in the new expanded laboratory

1947. In the 1970s, as the state wound down its grants, Studsvik was forced to diversify into many other areas related to energy, such as waste incineration and district heating.

Studsvik is 63.3% owned by Atle, a hands-off investment firm which specialises in building up firms prior to stock exchange floatation. The minority owner, Euroventures, is committed to selling out within two years and the firm will be put on the Stockholm stock exchange early next year.

Studsvik's Other Business segment, which is mainly made up of Studsvik Polymer, accounted for under 3% (US$2 million) of net sales in 1998. The four main business units - Nuclear Technology, Waste & Decommissioning, Industrial Services and Nuclear Medicine - all dwarf Studsvik Polymer. So from where will the growth for Studsvik Polymer come to keep investors happy when the parent company is publicly owned?

'In the short-term we see a lot of growth in PE 100. We have been involved in the PE 100+ Association, which we think is essentially a move by the resin producers to create a stronger position and customer confidence in it', Tränkner says. 'In the longer term, Lifetime Engineering projects for specific products and components will be important but, as this will take some time to build up, we will start with smaller projects'.

Testing of pipes in chlorinated water is another area in which Studsvik Polymer sees strong growth and, following recent investment, the company can now conduct up to 23 parallel tests in chlorinated water. The recent laboratory expansion had this very much in mind. Likewise the testing of CPVC pipes, which have never been subject to the same intensity of testing as polyolefin pipes, and complex tests such as thermal cycling, offer good prospects.

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