

# G&A

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# Engineering Marvels

The 240 MW Uri-II  
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SPML Infra Limited

Despite unfavourable economic scenario over the past few years, the infrastructure giants have successfully executed several mega projects across the country





# Supreme Industries: Pioneer in energy efficiency products



Atul Khanna



*Author is General Manager,  
Thermal Insulation Division,  
The Supreme Industries Ltd.*

Estimates by various agencies, suggest that residential, commercial, and public buildings account for 30 to 40 per cent of energy consumption. Currently, most of the energy consumption attributable to buildings is used during their operational phase, rather than for construction or demolition. We recognize that building energy is part of a complex system that includes transport and urban planning and has major social consequences as well as climate change impacts. These sectors contribution to current CO<sub>2</sub> emissions is estimated by sources at 25 to 35 percent.

Before launching major policies on energy efficiency in a country, all possible efforts should be made to gather data on the energy consumption of the various sectors and forecasts on their evolution. This information is necessary to choose priority targets correctly. In many countries, a full range of data may not be available. However, general orientations can be inferred from information such as growth rates of major economic sectors, population growth, lifestyle changes etc.

Once priority targets have been chosen, emphasis on policies could be decided such as, level of enforcement of mandatory requirement, level of expertise of the local building professionals, ownership issue, self build segment, duration of the policy, performance or prescriptive codes. It may be noted that performance codes are difficult to understand thus, difficult to design requiring more professional experience. But prescriptive codes are more suitable in situations with low skill and qualification and at the initial stages. Though performance standards allow greater flexibility for designers and architects.

Mandatory codes require all plans for new construction be checked for compliance with the energy code before a building permit is granted.

Also during construction, periodic inspections are required to verify that construction is consistent with the approved plans. New buildings that will use more energy than necessary are being built every day, and millions of today's inefficient buildings will remain standing in 2050 (against the 2050 baseline called for by the Intergovernmental Panel on Climate Change). Therefore, we must now start to aggressively reduce energy use in new and existing buildings.

Both new and existing buildings can be made more energy-efficient using a combination of passive and active measures in design and operation. Incorporating



the best design and technical solutions in new and existing buildings can cut energy use by two-thirds. This presents an excellent opportunity for business to develop new products and services that cost-effectively reduce the energy burden on consumers, countries and climate.

Some analysis have identified helpful energy-efficiency investments such as building insulation, which have very low or even negative costs over the lifetime of the investment. Some of these energy saving products are offered by Supreme Industries, which cater to different market segments such as air conditioning, industrial sheds, building sector and a less developed sector of Noise control. These products are indigenously available and are aligned with the requirement of such products within the country.

One of the reasons for the slow spread of energy efficiency, even when it is cost-effective, is the lack of consumer awareness concerning energy consumption, the benefits of energy efficiency improvements, and how to implement these measures. Surveys regularly demonstrate that energy users underestimate the benefits of energy-saving technologies and overestimate their costs in some countries, regulations mandate large energy consumers, including commercial buildings, to have regular audits. In other countries, incentive programs attempt to encourage large consumers to audit their buildings on a voluntary basis. The labels and ratings can provide a useful reference for public or private programmes promoting energy-efficient buildings, such as tax incentives, rebates, or 'green' public procurement. More and more, voluntary rating and labeling methods are not restricted to energy efficiency assessment, but look at other environmental issues, such as waste, water, and air quality.

Designing, building, and renovating more energy-efficient building requires changing the work practices of professionals in the building sector, including architects, designers, builders, contractors, installers, and so forth. Buildings need to be designed differently and new technologies promoted. Professionals would require appropriate training, which takes a long time. Energy Service Companies (ESCOs) can help energy consumers go forward with energy efficiency investments by providing them with services and financing, and by guaranteeing results.

The office subsector is the largest in the commercial segment in floor space and energy use in most countries. This sector is one of the fastest growing sectors in India, reflecting the increasing share of the services sector in the economy. The complexity of the office building market complicates the challenge. There are many players, especially in the leased segment – developers, construction companies and material and equipment suppliers and there are many owners & agents. Enormous savings are possible even with the anticipated huge increase in building numbers. But current policies, financial arrangements and behaviors will not provoke the necessary decisions by businesses and individuals. The necessary transformation with stronger market signals and regulatory change will make progress in the building sector. Transformation will only happen when:

- Political will and business leadership make building energy a top priority
- Favorable and reliable financial returns are available
- Design and technology innovations to reduce first costs
- Innovative financial models
- Business houses, government authorities and others work together

Strict building codes and equipment efficiency requirements should define maximum acceptable energy consumption (based on appropriate indicators) for each building subsector, relevant to the climate conditions of each region. The costs of transformation will fall on society as a whole: business, individuals and governments. Sharing the burden is appropriate and aligns with the benefits that the spending will deliver. Businesses will develop attractive markets and improved buildings.

Municipalities have an important role to play in promoting energy efficiency in all buildings and implementing action plans locally. They may also be more responsive to environmental concerns. Municipalities are often deterred by procurement rules mandating that they purchase solutions with the lowest upfront costs rather than lower overall costs and ignoring environmental and social benefits. Changing these rules is often a pre-requisite before any large-scale changes can take place. Leadership is essential to change a culture and stimulate action. ■







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# The most compressible filler board for expansion joints

## **DURAboardHD100**

[Formerly SILFLEX/ CAPCELL HD100]

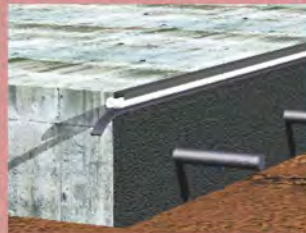
A pre-moulded, compressible filler board, with high performance closed-cell joint filler material. Suitable for use as expansion joint filler in concrete, brick, block work and isolation joints, where readily compressible, low load transfer joint filler is required.

### Features

- Closed cell & prevents from water leakage • Thermally stable (from -40°C to +70°C) • Resilient • Non-deteriorating
- Bitumen free • Environment friendly and easy to handle • Rot proof & bacteria resistant



DURAboardHD100 used in expansion joints in roads



DURAboardHD100 used in expansion joints in columns



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**DURARods [Formerly SILSEAL]:** A closed cell polymer based product with a circular profile which helps to maintain desired thickness of sealant at the joint's centre.

**Corporate Office Mumbai:** 1161, Solitaire Corporate Park, Guru Hargovindji Marg, Andheri – Ghatkopar Link Road, Chakala, Andheri (E), Mumbai – 400093 Tel: (+91-22) 40430000 / 67710000 / 30840000 Fax: (+91-22) 40430099 / 67710099 / 30840000 **Ahmedabad:** Tel: (+91-79) 27681361 / 27680043 / 27680903 Fax: (+91-79) 27680064 **Bengaluru:** Tel: (+91-80) 22215475 / 22104698 Fax: (+91-80) 22104697 **Chennai:** Tel: (+91-44) 43851500 / 39811176 / 39811174 Fax: (+91-44) 43850498 **Delhi:** Tel: (+91-11) 46590000 / 26413728 / 26217454 Fax: (+91-11) 46561393 **Hyderabad:** Tel: (+91-40) 23221140 Fax: (+91-40) 23221120 **Kolkata:** Tel: (+91-33) 24858837 / 24858839 / 24858833 Fax: (+91-33) 24858838 **Pune:** Tel: (+91-20) 25890538 **E-mail:** dura@supreme.co.in **Website:** www.supreme.co.in