

EFFECTIVE, ENVIRONMENTAL, AND COST EFFICIENT

RESULTS FOR USE OF SPIRALITE DUCTING

Introduction

For buildings across the UAE, efficient air conditioning systems are critical. In each building, systems have to be efficient in operation, being able to consistently pump air around a building. If a building's cooling systems are ineffective, then they will produce more carbon emissions, cost more to run, and ultimately require replacing sooner.

Khansaheb Industries conducted a study to demonstrate the effectiveness of its Spiralite duct product in reducing leakage of air from air conditioning systems, and in doing so maintaining pressure within the system, saving electricity use and cost in keeping buildings cool. Spiralite ducting is cylindrical, as opposed to conventional air conditioning ducting, which is rectangular. This difference in shape delivers significant savings: environmental savings, electricity savings, and cost savings.

In total, Spiralite provides a total energy saving of 62% over conventional systems. In one year in a ten story building, the system saves around 28,000 tonnes of carbon dioxide.



Results – External Static Pressure

All air conditioning systems both push air into a building and pull it out. That process creates pressure, which is termed external static pressure (ESP).

Khansaheb's Spiralite duct product, which is cylindrical, achieves impressive results in reductions of ESP, compared to conventional rectangular ducting:

- With Spiralite, ESP is around **28% less than conventional ducting**
- Thanks to this reduction, Spiralite requires **16.8 kilowatts of electricity** per hour (kWh), compared to **23 kWhs for conventional systems**
- Across the course of one year, around **53,300 kWhs are saved** through Spiralite ducting on one ten story building alone. **That saving is enough to power five houses for a year.**

Results – Leakage

Air conditioning systems will leak air. The more air they leak, the greater amount of electricity will be required to maintain pressure across the system.

Khansaheb's Spiralite duct product, which is cylindrical, leaks significantly less air compared to conventional rectangular ducting:

Conventional systems leak 2,633.4 litres of air each second. That's equivalent to the volume held by three and a half hot tubs

Spiralite only leaks 217 litres of air per second: a percentage decrease of over 92%

In the course of a year across a ten story building, Spiralite saves around 67,239 kWhs to maintain pressure across an air conditioning system. That represents a saving of 34% in total.

