

South Africa

SANS 10400-XA The application of the National Building Regulations

OBJECTIVE

South Africa National Standard [SANS 10400-XA](#) aims to enhance energy efficiency in South African buildings by setting mandatory requirements for energy use in new construction and significant renovations. This initiative supports national goals to reduce greenhouse gas emissions and promote sustainable development.

COUNTRY

South Africa,
2021 – ongoing

SECTOR AND APPROACH

Buildings; Regulation

SOURCE

[South Africa National Standards](#)

DESCRIPTION

Implemented nationally, SANS 10400-XA applies to all new buildings and extensions requiring municipal approval. It sets specific requirements for building envelope components, such as insulation levels, glazing, and orientation, as well as mandating that at least 50% of annual domestic hot water demand is met through energy efficient means.

UNIQUE ASPECTS OF THE POLICY

SANS 10400-XA offers flexible compliance pathways: the prescriptive route, the performance route, and the reference building route. This flexibility allows designers to choose methods best suited to their projects while ensuring energy efficiency standards are met. Additionally, the policy's integration in the [National Building Regulations \(SANS 10400\)](#) makes compliance mandatory, enhancing impact.

RESULTS

While comprehensive national data on energy savings is limited, case studies demonstrating opportunities indicate significant potential. For instance, a [4 000 m² government office building](#) used single glazing with low solar heat gain properties and incorporated external shading devices. The building's rectangular, north-facing design optimised natural daylight and passive cooling, resulting in reduced operational cooling costs and enhanced thermal comfort, in compliance with SANS 10400-XA.

LESSONS LEARNED

Before the 2021 version of SANS 10400-XA, it was applied in conjunction with SANS 204. Merging the two regulations reduced confusion. Allowing rational designs to bypass certain requirements leaves some flexibility for building designers, while keeping the law clear and simple.

ALIGNMENT WITH REGULATORY AND POLICY FRAMEWORKS

SANS 10400-XA complements South Africa's broader energy efficiency and environmental strategies, including the [National Energy Efficiency Strategy](#). It also aligns with voluntary standards like [SANS 204](#), which offers guidelines for achieving higher energy performance levels, and supports initiatives such as the Green Building Council's rating systems. The regulation also complements the [Energy Performance Certificates](#) (EPCs), which indicate the energy consumption of a building through a performance scale of A-G, with A indicating the highest level of energy efficiency and G being least energy efficient.

IMPLEMENTATION AND ENFORCEMENT

The National Home Builders Registration Council is a regulatory body that provides direct training, as well as guidelines that help interpret the rules in SANS 10400 XA. It is also responsible for the physical inspection of buildings and certifying that they meet building code standards. Although energy efficiency is not explicitly mentioned, it is incorporated within the overall building standards.