

INTRODUCTION TO THE IBS CONTENT SCORING SYSTEM (IBS SCORE) MANUAL

By: Construction Industry Development Board (CIDB)

INTRODUCTION

Prosperity and high economic growth in Malaysia has created a high demand for construction activities. As a consequence, this has attracted a huge number of foreign workers into this country to take up employment on site as unskilled labour doing manual jobs. Despite their contributions, the country is in a quagmire with a host of problems such low quality works, delays, wastages, social problems, diseases, etc.

IBS ROAD MAP

It is the right time now for some form of government intervention. Industrialisation of the construction industry is seen as the only feasible way forward. As such the government has laid out a comprehensive national IBS Road Map for the construction industry to adopt. Essentially the Road Map evolves on the policy of a phased reduction of dependency on foreign labour and encouraging investment in technologies, techniques and processes of construction. It lays out a definite action plan which when successfully implemented will ensure a successful upgrading of our construction industry.

As part of the push for the utilisation of Industrialised Building Systems, a number of incentives and regulatory requirements have been put forward. An example of a regulatory requirement is the minimum percentage of utilisation of IBS in government building projects.

Likewise, the minimum percentage requirement is also needed for CIDB Levy exemptions. Consequently, some form of IBS content assessment is needed for the purpose.

The IBS Content Scoring System (IBS Score) is a systematic and structured assessment system that can be used to measure the usage of Industrialised Building Systems (IBS) in a consistent way.

THE IBS SCORE MANUAL

The objective of the manual is to provide a well-structured assessment system for calculating the IBS Score. It sets out the IBS Score formula, the IBS Factor for each of the elements used in the building, methods of calculating the IBS Score, explanatory notes, as well as sample calculations. It is also intended to provide complete guidance for every professional to evaluate the IBS Score for any building project.

PRINCIPLES OF IBS SCORING

The IBS Scoring System puts emphasis on the following attributes:

1. the use of prefabricated and precast components
2. off-site production of components
3. the use of standardised components
4. repeatability
5. design using Modular Co-ordination concept

A higher IBS score is a reflection of a reduction of site labour, lower

wastage, less site materials, a cleaner environment, better quality, a neater and safer construction site, faster project completion, as well as lower total construction costs.

The method of determining the IBS Score is designed to be a simple but effective process. Points are awarded based on the IBS Factors of the structural and wall elements used. The presence of high repetitiveness in the design as well as other simplified construction solutions shall also contribute to the total score. The points are summed up to give the IBS Score of the building. The IBS score for a whole project development that consists of a group of buildings can also be calculated.

THE IBS CONTENT SCORING SYSTEM

- i) The maximum IBS Score for a building is 100 points.
- ii) The IBS Score is made up of the following components:

Part 1 – Structural Systems

(Maximum score is 50 points)

Points are awarded for various types of structural systems used e.g. precast concrete beams and columns, steel, prefabricated timber, etc.

Part 2 – Wall Systems

(Maximum score is 30 points)

Points are awarded based on various types of wall systems used e.g. precast concrete panel, glass, dry partition, block work, etc.

Part 3 – Other Simplified

Construction Solutions

(Maximum score is 20 points)

Points are awarded based on usage of other simplified construction solutions e.g. standard components based on MS 1064, standardised grids,

other 3D prefabricated components such as prefabricated toilets, staircases, etc.

iii) The IBS Score formula is:

$$\begin{aligned} \text{IBS SCORE} = & \text{SCORE FOR STRUCTURAL SYSTEMS} \\ & + \\ & \text{SCORE FOR WALL SYSTEMS} \\ & + \\ & \text{SCORE FOR OTHER SIMPLIFIED} \\ & \text{CONSTRUCTION SOLUTIONS} \end{aligned}$$

Or, in detail:

$$50 \sum \left[\frac{Q_S}{Q_{ST}} \right] F_S + 30 \sum \left[\frac{Q_W}{Q_{WT}} \right] F_W + S$$

Where:

- Q_S – Floor area of structural system
- Q_{ST} – Total floor area of building
- F_S – IBS Factor for structural system
- Q_W – Length of wall system (external or internal)
- Q_{WT} – Total wall length (external and internal)
- F_W – IBS Factor for wall system
- S – IBS Score for other simplified customer solutions

The tables for F_S , F_W and S can be found in the IBS Score manual.

- iv) Only superstructures are considered in IBS Score calculations.
- v) In the case of a group of buildings in one project, the IBS Score of the project shall be calculated by summing the weighted IBS Score of each individual building, that is, the IBS Score of each building is multiplied by the percentage of area of the respective building (out of the total area of the project):

$$\sum \left[\text{IBS SCORE FOR BUILDING} \times \frac{Q_{ST}(\text{building})}{Q_{ST}(\text{project})} \right]$$

Please contact CIDB's Technology Development Division at tech@cidb.gov.my for more details. The full version of the IBS Score Manual will be made available to the public from 1 January 2005. ■