
**Determination of span rating for
natural fibre-reinforced plastic
composite (NFC) deck boards**

*Détermination de la portée nominale des lames de platelage en
composite plastique renforcé de fibres naturelles (NFC)*





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Foreword

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Introduction

Natural fibre-reinforced plastic composites (NFC) are made of one or several cellulosic materials combined with one or several thermoplastics. Currently, cellulosic materials mainly come from different natural plant sources and the most common thermoplastics, including virgin and recycled forms, are polyethylene, polypropylene and polyvinyl chloride. In the past, these composites used to be called wood plastic composites (WPC). In this document, NFC is used instead of WPC, in line with the terminology used in ISO 16616.

The production of NFC in the thermoplastics industry has gained much acceptance in recent years and is expected to keep growing rapidly. This type of composite material has become an important family of engineering materials due to the increasing need for sustainable and biodegradable renewable materials, which are known as “green composites.” NFC has sustainable character due to the presence of wood as a natural component, which enables environmental protection and minimization of waste formation. Such materials offer significant advantages which justify their use.

NFC has recently found wide applications in construction and decoration areas including decking, fencing, flooring, landscaping, railings, window framing, and roof tiles. Meanwhile it is also applied for packaging, automotive industries, furniture and other items.

For deck boards used in outdoor environments, some performance measurements, such as temperature and moisture effects, ultraviolet resistance, freeze-thaw resistance, etc., are used in the determination of the span rating in order to assist in the proper installation and using. However, due to the lack of a unified testing method to evaluate a span rating indicating the board's ability to comply with functions identified for its specific end use, therefore, it would be required to establish an ISO standard for removing the barriers of deck boards in the application and sales, and encouraging technology development in the NFC production field.

