



# STRESCORE

*Precast/Prestressed Concrete  
Hollow Core Plank*

*2007 edition*

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*Strescon is a member of the OSCO Construction Group*

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## INTRODUCTION TO STRESCORE PLANK

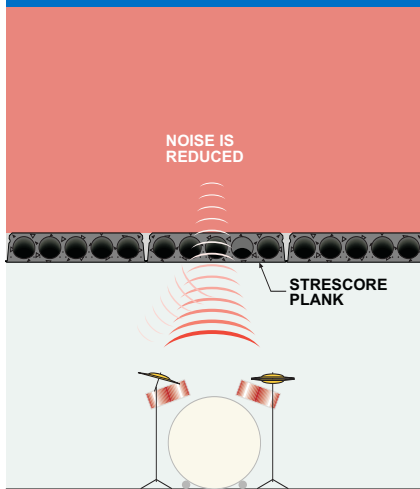
For the architect or consulting engineer, this manual is intended as a guide for working with Strescore plank using various construction methods.

Strescore plank is a precast, prestressed concrete member with continuous voids provided to reduce weight. It is commonly used as a floor or roof deck.

Used as floor and ceiling assemblies, Strescore plank has an excellent sound transmission class rating, ranging from about 50 to 53 without topping. The impact insulation class rating starts at about 26 for a plain plank, and may be increased to over 78 with the addition of carpeting and underlay. Various fire ratings can also be achieved depending on floor or ceiling finish.

Precast prestressed Strescore plank is extruded on long line casting beds using zero slump concrete. The concrete is fed into the extruder and then forced into the compaction space using feeding screws, which also push the extruder along the casting bed. Forming dies follow the feeding screws to give the required shape to the voids. Once cured, the Strescore plank is then cut to length.



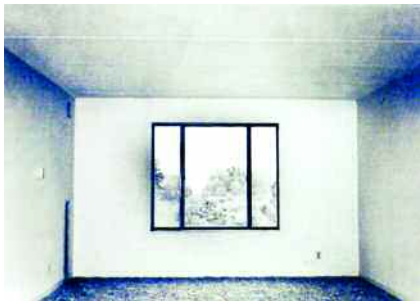


## ADVANTAGES OF STRESCORE PLANK

Strescore plank is widely known for providing economical and efficient floor and roof systems. The top surface can be prepared for installation of a floor covering by feathering the joints with a latex cement mix, installing non-structural fill concrete ranging from 1/2 inch to 2 inches thick, or by pouring a composite structural concrete topping. The underside can be used as a finished ceiling either by painting or by applying an acoustical spray.



Strescore plank is cambered as with most prestressed structural members. Areas with differential cambers may cause a problem and should be recognized and dealt with in the design layout. Wall locations may hide such a joint, but the door swing should be directed to the least variable side.



Camber can also be accommodated by providing a topping. The quantity of topping required must consider the amount of camber and the function of the floor.

Camber, camber growth, and deflections must be taken into account in roofing details. Where changes in relative slab position occur, counterflashings are suggested to accommodate such changes.



## DESIGN RESPONSIBILITIES

Final design of the individual plank is usually the responsibility of Strescon Limited. The planks are designed according to the latest requirements of ACI standard 318 or CSA standard A23.3, to carry the loads specified in the contract documents. The design of the supporting structure, diaphragm action, lateral loads, bracing anchorage, and stability of the various components is the responsibility of the project engineer.

Lateral load transfer can be accomplished by weld plates or grouted connections. It should be noted that PCI recommends that prestressed concrete components such as Strescore plank should not be rigidly connected at both ends. This is to prevent damage to the plank or supporting structure due to creep, shrinkage and temperature change movements



which occur in the plank.

All openings larger than 12" in size should be accurately located on the drawings so the effect on the Strescore plank can be considered during the design.

Strescon Limited will generally produce a set of erection drawings consisting of layout, section, and detailed drawings. The layout drawings will show the location of each plank as well the location of openings and any details which affect the planks.

The architect or project engineer should carefully review the erection drawings during the approval process

to ensure that openings are properly sized, located, and all details have been properly incorporated.



## FRAMING CONCEPT

The primary consideration in developing a framing scheme using Strescore plank is the span length. Please refer to the load tables section for recommended limits on Strescore plank.

Consideration must be given to factors such as superimposed loads, partitions, or a large number of openings. Each of these factors will result in higher load capacity requirements. The fire resistance rating required for the application will also affect the load capacity of a plank.

It is more economical to have the plan dimensions fit the plank module. Non-module plan dimensions will be accommodated using partial width planks, therefore, joint locations and overall detailing should be discussed with Strescon Limited.

Construction tolerances must be accounted for in developing a plan layout. Tolerance on plank length should be accommodated by allowing a gap at the plank ends in the bearing detail.

Except for special situations, keyway grout is normally a sand and Portland cement mixture in proportions of about 3:1. The amount of water used will be determined by the method used to place the grout in the keyway. It will generally result in a wet mix. The configuration of the key is such that vertical load transfer can still occur with the presence of a shrinkage crack. Rarely is grout strength required in excess of 3000 psi.



# STRESCORE PLANK: FROM START TO FINISH PRODUCTION



## QUALITY CONTROL



## DELIVERY



**ERECTION & GROUTING**



**TYPICAL APPLICATIONS**

- INSTITUTIONAL
- APARTMENTS & CONDOS
- HOTELS/MOTELS
- RESIDENTIAL
- COMMERCIAL/INDUSTRIAL
- STUDENT HOUSING



**TYPICAL APPLICATIONS (CONTINUED)**

