

<b>Applicant:</b>  City of Seattle Department of Construction and Inspections	<b>Page</b>  1 of 2	<b>Supersedes:</b>  DR 5-2015
	<b>Publication:</b>	<b>Effective:</b>
<b>Subject:</b>  Alternate Design Requirements for Use of Special Reinforced Concrete Shear Walls in Over Height Buildings	<b>Code and Section Reference:</b>  Seattle Building Code Section 1613.4.1	
	<b>Type of Rule:</b>  Code Modification	
	<b>Ordinance Authority:</b>  SMC 3.06.040	
<b>Index:</b>  Seattle Building Code	<b>Approved</b>	<b>Date</b>
_____ Nathan Torgelson, Director, SDCI		

## BACKGROUND

This Director's Rule establishes alternate design requirements for the use of Special Reinforced Concrete Shear Walls (SRCSW) in buildings with structural height between 240 feet and 265 feet.

The 2018 Seattle Building Code adopts ASCE 7-16 and its requirements for the maximum permitted structural height for different seismic force-resisting systems. Per ASCE 7-16, the maximum structural height of a prescriptively designed Special Reinforced Concrete Shear Wall seismic force-resisting system is 160 feet. This height may be increased to 240 feet when the requirements of 2018 Seattle Building Code Section 1613.4.1 are satisfied.

For a SRCSW building to be constructed with a structural height above 240 feet, the building code requires the designer to engage in a Performance Based Design (PBD) process per ASCE 7-16 Section 12.2.1.1. Through a rigorous level of analysis relative to prescriptive designs, this process allows the use of a structural system with a risk level equivalent to a building designed to the code's targeted performance.

The City of Seattle's zoning code references a height limit of 240 feet with a height bonus allowed in some areas of the city. The zoning requirements define height differently than building code structural height. As a result, several tall buildings were proposed with a structural height somewhat greater than 240 feet.

Extensive review of past Performance Based Designs showed that a prescriptive design option in the code should be allowed for SRCSW buildings that have a structural height slightly above the code allowed 240 foot limit.

### **RULE**

As an alternative to a Performance Based Design, buildings with a SRCSW seismic force-resisting system may have the structural height increased from 240 feet to 265 feet provided that all the requirements in Seattle Building Code 1613.4.1 and 1613.4.2 are satisfied. Structural height is measured in accordance with the ASCE 7-16 definition in Section 11.2, including the information contained in the commentary regarding sloping sites.

A Code Modification Request per Seattle Building Code Section 104.4 is required by SDCI in order to apply this rule.

SDCI may require a Performance Based Design for unique structures.

### **REFERENCE**

See [2012 SBC Code Interpretation ASCE 7-10](#) for our interpretation of structural height.