

RAS-128

ROOFING APPLICATION STANDARD (RAS) No. 128-20 STANDARD PROCEDURE FOR DETERMINING APPLICABLE WIND ALLOWABLE STRESS DESIGN PRESSURES FOR LOW SLOPE ROOF IN ACCORDANCE WITH ASCE

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1. Scope

1.1 This roofing application standard has been developed to provide a responsive method of complying with the requirements of Chapters 15 & 16 (High-Velocity Hurricane Zones) of the *Florida Building Code, Building*. **Compliance with** the requirements and **procedures herein** specified, where the pressures (P_{asd}) have been determined based on Table 1 **or 2**, of this standard, as applicable, do not require additional signed and sealed engineering design calculations. All other calculations must be prepared, signed and sealed by a professional engineer or registered architect.

2. Definitions

2.1 For definitions of terms used in this application standard, refer to ASTM D1079 and the *Florida Building Code, Building*.

3. Applicability

3.1 This application standard applies to buildings meeting all of the following:

- a. located in eExposure Category C and or D category buildings, **with and without overhangs**; and
- b. building eave heights of less than or equal to 40 60 feet; and
- c. roof incline (pitch slope) is not greater than $\leq 1.51/2$ in.:12 in., and
- d. risk category II buildings only.

3.2 Using Table 1 **or 2** below, as applicable, determine the minimum design pressure for each respective roof area, which corresponds to the applicable roof height range.

3.3 Referencing the selected Roof Assembly Product Approval, check that the listed maximum allowable components and cladding design pressure for the particular approved system meets or exceeds those listed in Table **1 or 2** above below, as applicable.

<p>TABLE 1 — RISK CATEGORY II EXPOSURE CATEGORY “C”^{1,2} MINIMUM DESIGN WIND UPLIFT PRESSURES, IN PSF FOR FIELD [Pasd(1)], PERIMETER [Pasd(2)] AND CORNER [Pasd(3)] AREAS OF ROOFS FOR</p>
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EXPOSURE "C" BUILDINGS			
Roof mean height (below)	Pasd(1) (Field)	Pasd(2) (Perimeter)	Pasd(3) (Corners)
-			-
20	-42.8	-71.7	-108.0
25	-44.8	-75.1	-113.0
30	-46.4	-77.8	-117.2
35	-48.1	-80.6	-121.3
40	-49.4	-82.9	-124.7

1 Calculated in accordance with ASCE 7.

2 $P_{asd} = 0.6P_{ult}$

TABLE 2 — RISK CATEGORY II EXPOSURE CATEGORY "D"^{1,2} MINIMUM DESIGN WIND UPLIFT PRESSURES, IN PSF FOR FIELD [P_{asd}(1)], PERIMETER [P_{asd}(2)] AND CORNER [P_{asd}(3)] AREAS OF ROOFS FOR EXPOSURE "D" BUILDINGS			
Roof mean height (below)	Pasd(1) (Field)	Pasd(2) (Perimeter)	Pasd(3) (Corners)
-			-
20	-51.4	-86.2	-129.7
25	-53.4	-89.5	-134.7
30	-55.0	-92.3	-138.9
35	-56.4	-94.5	-142.3
40	-57.7	-96.8	-145.6

1 Calculated in accordance with ASCE 7.

2 $P_{asd} = 0.6P_{ult}$

TABLE 1 — MINIMUM ASD DESIGN WIND UPLIFT PRESSURES, IN PSF FOR ROOF SLOPE = 1½ : 12 RISK CATEGORY II EXPOSURE CATEGORY "C"	
	(Overhang)
	Roof Pressure Zones

Eave Height	1' and 1	2	3
=15'	-64	-84	-115
>15' to =20'	-68	-89	-122
>20' to =25'	-71	-94	-128
>25' to =30'	-74	-97	-133
>30' to =35'	-76	-101	-137
>35' to =40'	-78	-104	-141
>40' to =45'	-80	-106	-145
>45' to =50'	-82	-109	-148
>50' to =55'	-84	-111	-151
>55' to =60'	-85	-113	-154

**TABLE 2 -- MINIMUM ASD DESIGN WIND UPLIFT PRESSURES, IN PSF FOR
 ROOF SLOPE = 1½ :12
 RISK CATEGORY II EXPOSURE CATEGORY "D"
 (Overhang)
 Roof Pressure Zones**

Eave Height	1' and 1	2	3
=15'	77	102	139
>15' to =20'	81	107	146
>20' to =25'	85	112	152
>25' to =30'	87	115	157
>30' to =35'	90	118	161
>35' to =40'	92	121	165
>40' to =45'	94	124	169
>45' to =50'	96	126	172
>50' to =55'	97	128	175
>55' to =60'	99	130	177

**TABLE 31 -- MINIMUM ASD DESIGN WIND UPLIFT PRESSURES, IN PSF
FOR ROOF SLOPE $\leq 1\frac{1}{2} : 12$
RISK CATEGORY II EXPOSURE CATEGORY "C"**

(Roof)

<u>Eave Height</u>	<u>Roof Pressure Zones</u>			
	<u>1'</u>	<u>1</u>	<u>2</u>	<u>3</u>
<u>≤15'</u>	<u>-37</u>	<u>-64</u>	<u>-84</u>	<u>-115</u>
<u>>15 to ≤20'</u>	<u>-39</u>	<u>-68</u>	<u>-89</u>	<u>-122</u>
<u>>20' to ≤25'</u>	<u>-41</u>	<u>-71</u>	<u>-94</u>	<u>-128</u>
<u>>25' to ≤30'</u>	<u>-42</u>	<u>-74</u>	<u>-97</u>	<u>-133</u>
<u>>30 to ≤35'</u>	<u>-44</u>	<u>-76</u>	<u>-101</u>	<u>-137</u>
<u>>35 to ≤40'</u>	<u>-45</u>	<u>-78</u>	<u>-103</u>	<u>-141</u>
<u>>40' to ≤45'</u>	<u>-46</u>	<u>-80</u>	<u>-106</u>	<u>-145</u>
<u>>45' to ≤50'</u>	<u>-47</u>	<u>-82</u>	<u>-109</u>	<u>-148</u>
<u>>50' to ≤55'</u>	<u>-48</u>	<u>-84</u>	<u>-111</u>	<u>-151</u>
<u>>55' to ≤60'</u>	<u>-49</u>	<u>-85</u>	<u>-113</u>	<u>-154</u>

**TABLE 42 -- MINIMUM ASD DESIGN WIND UPLIFT PRESSURES, IN PSF
FOR ROOF SLOPE $\leq 1\frac{1}{2} : 12$
RISK CATEGORY II EXPOSURE CATEGORY "D"**

(Roof)

<u>Eave Height</u>	<u>Roof Pressure Zones</u>			
	<u>1'</u>	<u>1</u>	<u>2</u>	<u>3</u>
<u>$\leq 15'$</u>	<u>-45</u>	<u>-77</u>	<u>-102</u>	<u>-139</u>
<u>>15 to $\leq 20'$</u>	<u>-47</u>	<u>-81</u>	<u>-107</u>	<u>-146</u>
<u>>20' to $\leq 25'$</u>	<u>-49</u>	<u>-85</u>	<u>-112</u>	<u>-152</u>
<u>>25' to $\leq 30'$</u>	<u>-50</u>	<u>-87</u>	<u>-115</u>	<u>-157</u>
<u>>30 to $\leq 35'$</u>	<u>-52</u>	<u>-90</u>	<u>-118</u>	<u>-161</u>
<u>>35 to $\leq 40'$</u>	<u>-53</u>	<u>-92</u>	<u>-121</u>	<u>-165</u>
<u>>40' to $\leq 45'$</u>	<u>-54</u>	<u>-94</u>	<u>-124</u>	<u>-169</u>
<u>>45' to $\leq 50'$</u>	<u>-55</u>	<u>-96</u>	<u>-126</u>	<u>-172</u>
<u>>50' to $\leq 55'$</u>	<u>-56</u>	<u>-97</u>	<u>-128</u>	<u>-175</u>
<u>>55' to $\leq 60'$</u>	<u>-57</u>	<u>-99</u>	<u>-130</u>	<u>-177</u>

(S7157)

