

Table 31 Optimized **imperfect isogrid-stiffened** equivalent elliposidal shell. Design margins from Load Set 1 (**+mode 1 and +mode 2 imperfection shapes**) corresponding to the design optimized with the use of only mode 1 and mode 2 imperfection shapes. These margins are developed via the seven analyses of the type listed in the previous table. Critical margins = **bold**

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A typical margin with the meanings of the indices, a, b, c, d, e, explained:

5 1.919E+00 (STFBK1(1,1)/STFBK1A(1,1))/STFBK1F(1,1)-1; F.S.= 1.00

c d e a b

c d e c d e c d e

"STFBK" means "Stiffener buckling"

a = "A" means "Allowable value"

b = "F" means "Factor of safety"

c = Imperfection mode number, (1 or 2 in the cases explored here)

d = Load set number (1 or 2 in the cases explored here)

Load set 1 means "use +mode 1 and +mode 2 imperfection shapes"

Load set 2 means "use -mode 1 and -mode 2 imperfection shapes"

e = Region number:

(1 or 2 Region 1 is from the axis of revolution to xlimit,
that is, $0 < x < xlimit$.)

Region 2 is from xlimit to the equator,

that is, $xlimit < x < \text{semi-major axis}$.)

*** RESULTS FOR LOAD SET NO. 1 (+mode 1 and +mode 2 imperfections) ***
MARGINS CORRESPONDING TO CURRENT DESIGN (F.S.= FACTOR OF SAFETY)

MARGIN CURRENT

NO.	VALUE	DEFINITION
1	6.209E-01	(CLAPS1(1)/CLAPS1A(1)) / CLAPS1F(1)-1; F.S.= 1.00
2	1.589E+00	(GENBK1(1)/GENBK1A(1)) / GENBK1F(1)-1; F.S.= 1.00
3	1.686E+00	(SKNBK1(1,1)/SKNBK1A(1,1))/SKNBK1F(1,1)-1; F.S.= 1.00
4	1.689E+00	(SKNBK1(1,2)/SKNBK1A(1,2))/SKNBK1F(1,2)-1; F.S.= 1.00
5	1.919E+00	(STFBK1(1,1)/STFBK1A(1,1))/STFBK1F(1,1)-1; F.S.= 1.00
6	5.813E-01	(STFBK1(1,2)/STFBK1A(1,2))/STFBK1F(1,2)-1; F.S.= 1.00
7	3.470E-01	(SKNST1A(1,1)/SKNST1(1,1))/SKNST1F(1,1)-1; F.S.= 1.00
8	1.382E-01	(SKNST1A(1,2)/SKNST1(1,2))/SKNST1F(1,2)-1; F.S.= 1.00
9	3.923E-01	(STFST1A(1,1)/STFST1(1,1))/STFST1F(1,1)-1; F.S.= 1.00
10	-3.816E-02	(STFST1A(1,2)/STFST1(1,2))/STFST1F(1,2)-1; F.S.= 1.00
11	1.427E+00	(WAPEX1A(1)/WAPEX1(1)) / WAPEX1F(1)-1; F.S.= 1.00
12	6.727E-01	(CLAPS2(1)/CLAPS2A(1)) / CLAPS2F(1)-1; F.S.= 1.00
13	1.682E+00	(GENBK2(1)/GENBK2A(1)) / GENBK2F(1)-1; F.S.= 1.00
14	1.992E+00	(SKNBK2(1,1)/SKNBK2A(1,1))/SKNBK2F(1,1)-1; F.S.= 1.00
15	2.149E+00	(SKNBK2(1,2)/SKNBK2A(1,2))/SKNBK2F(1,2)-1; F.S.= 1.00
16	8.143E-01	(STFBK2(1,1)/STFBK2A(1,1))/STFBK2F(1,1)-1; F.S.= 1.00
17	7.200E-01	(STFBK2(1,2)/STFBK2A(1,2))/STFBK2F(1,2)-1; F.S.= 1.00
18	4.290E-01	(SKNST2A(1,1)/SKNST2(1,1))/SKNST2F(1,1)-1; F.S.= 1.00
19	4.917E-02	(SKNST2A(1,2)/SKNST2(1,2))/SKNST2F(1,2)-1; F.S.= 1.00
20	-2.078E-02	(STFST2A(1,1)/STFST2(1,1))/STFST2F(1,1)-1; F.S.= 1.00
21	-2.687E-02	(STFST2A(1,2)/STFST2(1,2))/STFST2F(1,2)-1; F.S.= 1.00
22	1.205E+00	(WAPEX2A(1)/WAPEX2(1)) / WAPEX2F(1)-1; F.S.= 1.00