1st & 2nd patch

ii) BODY:

(1.5 0 2.4) (1.75 0 1.875) (2 0 1.35) (2 0 0.9)

(1.5 -0.84 2.4) (1.75 -0.98 1.875) (2 -1.12 1.35) (2 -1.12 0.9)

(0.84 -1.5 2.4) (0.98 -1.75 1.875) (1.12 -2 1.35) (1.12 -2 0.9)

SURF 1

(0 -1.5 2.4) (0 -1.75 1.875) (0 -2 1.35) (0 -2 0.9)

(-0.84 -1.5 2.4) (-0.98 -1.75 1.875) (-1.12 -2 1.35) (-1.12 -2 0.9)

(-1.5 -0.84 2.4) (-1.75 -0.98 1.875) (-2 -1.12 1.35) (-2 -1.12 0.9)

(-1.5 0 2.4) (-1.75 0 1.875) (-2 0 1.35) (-2 0 0.9).

For C_1 continuity we see that

SURF 1: $\frac{\partial S}{\partial V} = \begin{bmatrix} (-0.84 & 0 & 0) \\ (-0.98 & 0 & 0) \\ (-1.12 & 0 & 0) \\ (-1.12 & 0 & 0) \end{bmatrix}$

SURF 2 $\frac{\partial S}{\partial V} = \begin{bmatrix} -0.84 & 0 & 0 \\ -0.98 & 0 & 0 \\ -1.12 & 0 & 0 \\ -1.12 & 0 & 0 \end{bmatrix}$

SURFACES ARE C1 continuous

for Body C_2 continuity check

SURF 1 $\frac{\partial^2 S}{\partial v^2} =$

$$\begin{bmatrix} ((0\ -1.5\ 2.4) - (0.84\ -1.5\ 2.1)) - ((0.84\ -1.5\ 2.4) - (1.5\ -0.81\ 2.1)) \\ ((0\ -1.75\ 1.875) - (0.98\ -1.75\ 1.875)) - ((0.98\ -1.75\ 1.875) - (1.75\ -0.98\ 1.875)) \\ ((0\ -2\ 1.35) - (1.12\ -2\ 1.35)) - ((1.12\ -2\ 1.35) - (2\ -1.12\ 1.35)) \\ ((0\ -2\ 0.9) - (1.12\ -2\ 0.9)) - ((1.12\ -2\ 0.9) - (2\ -1.12\ 0.9)) \end{bmatrix}$$

SURF 2 $\frac{\partial^2 S}{\partial v^2} =$

$$\begin{bmatrix} ((-1.5\ -0.84\ 2.1) - (-0.84\ -1.5\ 2.1)) - ((-0.84\ -1.5\ 2.1) - (0\ -1.5\ 2.1)) \\ ((-1.75\ -0.98\ 1.875) - (-0.98\ -1.75\ 1.875)) - ((-0.98\ -1.75\ 1.875) - (0\ -1.75\ 1.875)) \\ ((-2\ -1.12\ 1.35) - (-1.12\ -2\ 1.35)) - ((-1.12\ -2\ 1.35) - (0\ -2\ 1.35)) \\ ((-2\ -1.12\ 0.9) - (-1.12\ -2\ 0.9)) - ((-1.12\ -2\ 0.9) - (0\ -2\ 0.9)) \end{bmatrix}$$

$\frac{\partial^2 S}{\partial v^2}$ SURF 1 $=$

$$\begin{bmatrix} -0.18 & 0.66 & 0 \\ -0.21 & 0.77 & 0 \\ -0.24 & 0.88 & 0 \\ -0.24 & 0.88 & 0 \end{bmatrix}$$

$\frac{\partial^2 S}{\partial v^2}$ SURF 2 $=$

$$\begin{bmatrix} 0.18 & 0.66 & 0 \\ 0.21 & 0.77 & 0 \\ 0.24 & 0.88 & 0 \\ 0.24 & 0.88 & 0 \end{bmatrix}$$

Thus we see that C_2 continuity is not established.

IT ISNT C2 CONTINUOUS.