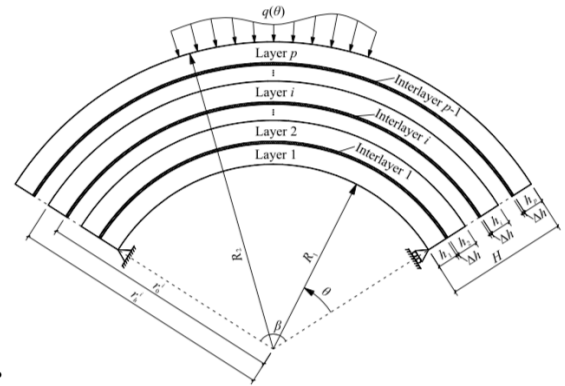
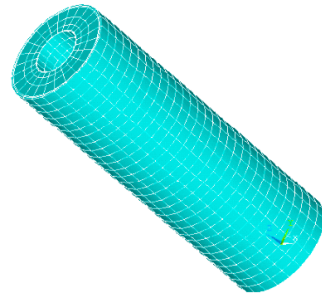




Fig. 11 Finite element mesh for CFDST columns confined by FRP



Professor Ding Zhou

Middle image above is from: Wang, J., Liu, W., Zhou, D., Zhu, L. and Fang, H. (2014), "Mechanical behaviour of concrete filled double skin steel tubular stub columns confined by FRP under axial compression", *Steel Compos. Struct., Int. J.*, 17(4), 431-452.

Right-most image above is from: Peng Wu, Ding Zhou, Weiqing Liu and Hai Fang, "Time-dependent behavior of layered arches with viscoelastic interlayers", *Mechanics of Time-Dependent Material*, August 2017

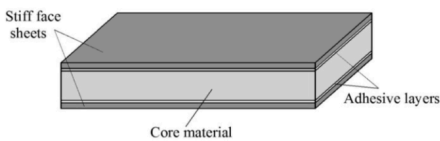


Fig. 1 Components schematic of sandwich structure

9	Face layer	
8	Adhesive layer	Permeation layer
6	Core layer	
4	Adhesive layer	Permeation layer
2	Face layer	

Fig. 2 Permeation effect of adhesives

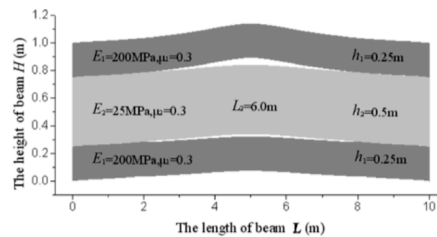


Figure 3 The buckling displacement mode of the beam with delamination depth $H_1/H = 0.25$

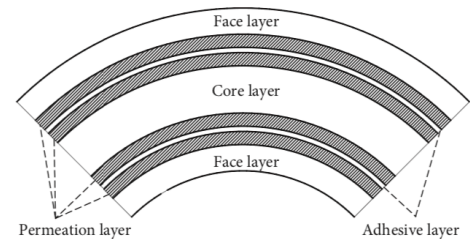


FIGURE 1: Permeation effect in the sandwich arch.

Left-most image above is from: Ruili Huo, Weiqing Liu, Peng Wu and Ding Zhou, "Analytical solutions for sandwich plates considering permeation effect by 3-D elasticity theory", *Steel and Composite Structures*, Vol. 25, No. 2, pp 127-139, 2017

Middle image above is from: Zhu Bo, Zhou Ding and Liu Weiqing, "Analytical study on buckling modes of simply supported delaminated composite beams", *The 5th International Conference on FRP Composites in Civil Engineering (CICE 2010)*, Beijing, China, September 27-29, 2010

Right-most image above is from: Ruili Huo, Yichen Liu, Peng Wu, Hai Fang, Weiqing Liu and Ding Zhou, "Elasticity solutions for sandwich arches considering permeation effect of adhesive", *Advances in Polymer Technology*, Vol. 2020, Article ID 7358930, 2020

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