

# Ritek XL Wall System • Acoustic Performance

## 8. ACOUSTIC PERFORMANCE

### Acoustic Performance BCA 2012 Part F5 - Sound Transmission and Insulation

The BCA requires particular walls in various classes of building (Class 2 or 3 or a Class 9c) to have a minimum acoustic insulation to avoid the airborne transmission of sound through walls.

- a) Between adjoining *sole-occupancy units*; and
- b) From common spaces to *sole-occupancy units*; and
- c) From parts of different classifications to *sole-occupancy units*.

### BCA 2012 PERFORMANCE REQUIREMENTS

#### BCA - FP5.2

##### **Class 2 or 3 Buildings**

Walls separating sole-occupancy units or a sole occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby, or the like, or parts of a different classification, must provide insulation against the transmission of –

- a) **Airborne sound**; and
- b) **Impact generated sound**, if the wall is separating a bathroom, sanitary compartment, laundry or kitchen in one sole-occupancy unit from a habitable room (other than a kitchen) in an adjoining unit,

#### BCA - FP5.5

##### **Class 9c aged care building**

Walls separating sole-occupancy units or a sole occupancy unit from a kitchen, bathroom, sanitary compartment (not being an associated ensuite), laundry, plant room or utilities room, must provide insulation against the transmission of –

- a) **Airborne sound**; and
- b) **Impact generated sound**, if the wall separates a sole-occupancy unit for a kitchen or laundry,

### Airborne Sound

#### XL WALL SYSTEM - COMPLIANCE VERIFICATION METHOD

##### **FV5.2**

Compliance with FP5.2(a) – airborne sound and FP5.3 to avoid the transmission of airborne sound through walls is verified when it is measured in-situ that –

- a) A wall separating sole-occupancy units has a weighted standardised level difference with spectrum adaptation term ( $D_{nT,w} + C_{tr}$ ) not less than 45 when determined under AS/NZS 1276.1 or ISO 717.1; or
- b) A wall separating a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby, or the like, or parts of a different classification, has a weighted standardised level difference with spectrum adaptation term ( $D_{nT,w}$ ) not less than 45 when determined under AS/NZS 1276.1 or ISO 717.1; or
- c) Any door assembly located in a wall that separates a sole-occupancy unit from a stairway, public corridor, public lobby, or the like, has a weighted standardised level difference with spectrum adaptation term ( $D_{nT,w}$ ) not less than 25 when determined under AS/NZS 1276.1 or ISO 717.1

RITEK XL WALL SYSTEM COMPLIANCE WITH THE BCA 2012 PERFORMANCE REQUIREMENTS OF FP5.2 AND FP5.5 FOR AIRBORNE SOUND IS BY THE VERIFICATION METHOD  
 $D_{nT,w} + C_{tr}$  NOT LESS THAN 45

### Impact generated sound

#### XL WALL SYSTEM - COMPLIANCE DEEMED-TO-SATISFY PROVISION

##### **F5.3**

Compliance with FP5.2(b) and FP5.5 (b) – impact generated sound is proposed to comply with the deemed to satisfy provisions when –

- a) Not applicable
- b) A wall in a building required to have an impact sound insulation rating must –
  - i) for a class 2 or 3 building be of discontinuous construction; and
  - ii) for a Class 9c aged care building must –
    - A) For other than masonry, be two or more separate leaves without rigid mechanical connection except at the periphery; or
    - B) Not applicable
- c) For the purposes of this part, discontinuous construction means a wall having a minimum 20mm cavity between 2 separate leaves, and
  - i) for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and
  - ii) for other than masonry, there is no mechanical linkage between leaves except at the periphery.

RITEK XL WALL SYSTEM COMPLIANCE WITH THE BCA 2012 PERFORMANCE REQUIREMENTS OF FP5.2 FOR IMPACT GENERATED SOUND IS BY THE VERIFICATION METHOD  
 $D_{nT,w} + C_{tr}$  NOT LESS THAN 45 + DISCONTINUOUS WALL

ACOUSTIC OPINION PKA-A083 - PKA ACOUSTIC CONSULTING ENGINEERS JULY 2012

# Ritek XL Wall System • Acoustic Performance

## BCA 2012 ACOUSTIC COMPLIANCE

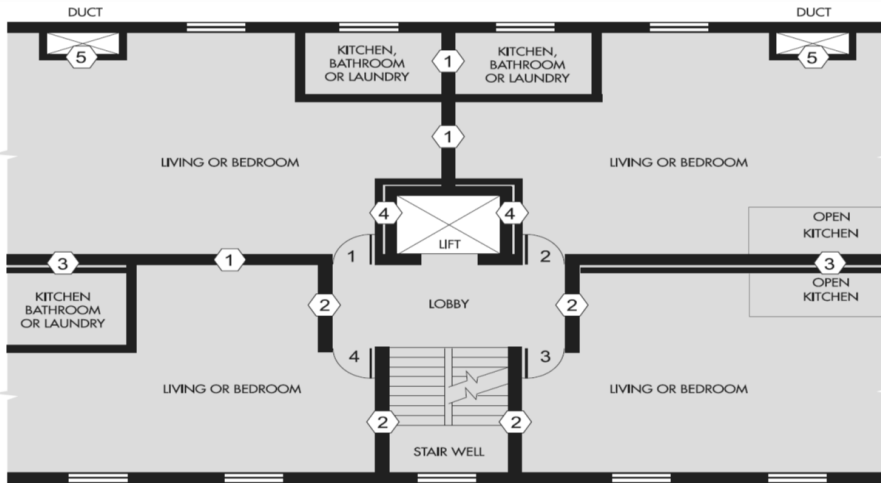


Figure 8.1 Requirements for Class 2 and Class 3 buildings according to BCA 2012

The BCA requirements for the types of wall configurations is shown in **Figure 8.1**

Ritek XL Wall Systems use three configurations to satisfy the requirements of the BCA as shown in **Figure 8.2**

The compliance of these wall configurations to satisfy the requirements for Class 2 and Class 3 buildings is given in **Table 8.1**

Figure 8.2 Ritek XL Wall Configurations

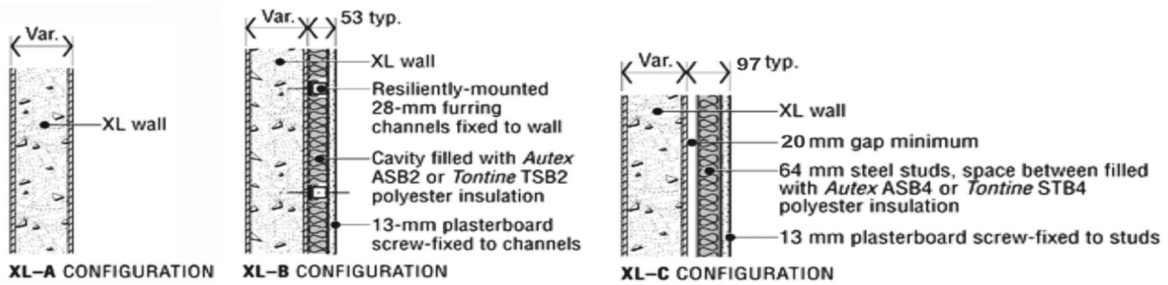


Table 8.1 Compliance of Ritek XL Wall Configurations for Class 2 and Class 3 buildings according to BCA 2012

	Concrete Core	Weighted Sound Reduction	WALL TYPE [1] Separating a Living or Bedroom from a Living or Bedroom	WALL TYPE [2] Separating a Living or Bedroom from a Lobby	WALL TYPE [3] Separating a Kitchen, Bathroom or Laundry from a Living or Bedroom	WALL TYPE [4] Separating a Lift shaft from a Living or Bedroom	WALL TYPE [5] Separating a Duct from a Living or Bedroom
	mm	Rw	Dnt,w + Ctr ≥ 45 or Rw + Ctr ≥ 50	Dnt,w ≥ 45 or Rw ≥ 50	Dnt,w + Ctr ≥ 45 + Impact insulation or Rw + Ctr ≥ 50 + Impact insulation	Dnt,w ≥ 45 + Impact insulation or Rw ≥ 50 + Impact insulation	Rw + Ctr ≥ 40
<b>Ritek Panel (XL-A CONFIGURATION)</b>							
115 XL-A	103	47	Yes – NT only	Yes – NT only	No	No	Yes – All States
135 XL-A	123	51	Yes – NT only	Yes – All States	No	No	Yes – All States
150 XL-A	138	53	Yes – All States	Yes – All States	No	No	Yes – All States
165 XL-A	153	54	Yes – All States	Yes – All States	No	No	Yes – All States
200 XL-A	188	56	Yes – All States	Yes – All States	No	No	Yes – All States
265 XL-A	253	59	Yes – All States	Yes – All States	No	No	Yes – All States
<b>Ritek Panel + Acoustic Insulation (XL-B CONFIGURATION)</b>							
115 XL-B	103	56	Yes – All States	Yes – NT only	Yes – NT only	Yes – NT only	Yes – All States
135 XL-B	123	58	Yes – All States	Yes – All States	Yes – NT only	Yes – NT only	Yes – All States
150 XL-B	138	59	Yes – All States	Yes – All States	Yes – NT only	Yes – NT only	Yes – All States
165 XL-B	153	60	Yes – All States	Yes – All States	Yes – NT only	Yes – NT only	Yes – All States
200 XL-B	188	62	Yes – All States	Yes – All States	Yes – NT only	Yes – NT only	Yes – All States
265 XL-B	253	70	Yes – All States	Yes – All States	Yes – NT only	Yes – NT only	Yes – All States
<b>Ritek Panel + Acoustic Insulation + Discontinuous Wall (XL-C CONFIGURATION)</b>							
115 XL-C	103	60	Yes – All States	Yes – All States	Yes – All States	Yes – All States	Yes – All States
135 XL-C	123	62	Yes – All States	Yes – All States	Yes – All States	Yes – All States	Yes – All States
150 XL-C	138	64	Yes – All States	Yes – All States	Yes – All States	Yes – All States	Yes – All States
165 XL-C	153	65	Yes – All States	Yes – All States	Yes – All States	Yes – All States	Yes – All States
200 XL-C	188	66	Yes – All States	Yes – All States	Yes – All States	Yes – All States	Yes – All States
265 XL-C	253	75	Yes – All States	Yes – All States	Yes – All States	Yes – All States	Yes – All States