



CRYSTAL D_G



METHOD OF BUILD

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General

GLAZED ELEVATIONS

Crystal DG in glazed form differs from many other systems as the vertical joints can have Crystal dry joints or the unique HIDDEN mullion post between glazed modules which is encapsulated within the glass cavity.

The HIDDEN mullion post comes as a two piece extrusion to facilitate the fixing of blind mechanisms. Ensuring a quick and clean installation of all trades.

SOLID ELEVATIONS

Crystal DG in the solid form differs from most other systems as it can be erected using hidden fix board clips giving a flush wall appearance. Using board clips the board joint detail can be either a flush tight joint (using back bevel boards). Or the board joint detail can have a front bevel of 3mm thereby giving a vee joint to enhance the board detail. Otherwise the standard joint trims can be used.

Sound

If the construction is for Sound Performance all wall and ceiling abutments must be sealed with a sound sealant such as a neoprene seal or similar. All doors must be of solid construction if timber doors are used, if glass doors are used make sure that the seals around door stop fit tight against the glass doors. Also making sure the glass doors fit as tight as possible into the frames, allow a max of 2mm clearance all round. If necessary an additional seal at base of door will assist in good sound attenuation. When double timber doors or Hospital type doors are used, rebated lip are highly recommended and possibly a seal fitted down the vertical joint of the doors.

Glass types

Crystal DG accepts glass from 6mm to 12.8mm. The external measurement of the glass stays at a constant 74mm no matter what combination of glass is used.

Framework

Crystal DG framework has a footprint of 88mm and all the sections no matter what combination of construction required stays constant. Crystal DG can completely integrate with the Finesse and Crystal single glazed systems, by using special clip fit adapters for all sections.

Good Fixing Practice

All joints must be fixed tightly using the appropriate Crystal fixing bracket and suitable fixings. Where more than one length of head channel (CGD130) is used jointing plate (CB80) must be used. As this ensures a square and flush joint is achieved.

Care of Product on site

Carefully unload all components and stack in a secure and safe dry area. When opening boxes or wrapping take care (especially if using a knife or similar object) not to scratch or dent the components. Check for any defects or damage and contact your supplier immediately. Do not attempt to use damaged components in your construction.

Fabrication of Sections on site

Always make sure when using a cross cut saw the blade is sharp and it is fixed on a bench securely. Leave a clear safe area for other site users of at least one metre around your work area. Keep all benches or other working platforms clean so when fabrication is undertaken damage to the sections will not occur.

Job Completion

Once the partitions are complete using a mild detergent solution wipe down the partition making sure that all stains and pencil marks are removed. Leave the site clean and tidy.



ERECTION SEQUENCE of Crystal SOLID ELEVATIONS 75mm Walls (using hidden fix board clips).**INSTALLATION**

1. Set out as per your layout plan all the ceiling channel (CGD70) and abutments using a chalk line.
2. If the partition specification requires a high level of sound performance, before fixing the ceiling channel (CGD70) insert a neoprene seal as indicated in the technical manual. Using suitable fixings fix the first channel (CGD70) and then fix the next channel (CGD70), ensure the joint is tight and square.
3. Where the solid elevations change to Double Glazed elevations allow for the Solid to Glazed section (CGD123) to go from floor to ceiling and butt against the end of the ceiling channel (CGD70). So deduct 30mm from the measurement of the ceiling channel (CGD70).
4. Using suitable fixings fix the wall abutment channels (CGD70) making sure that where the wall abutment channel butts to the underside of the ceiling channel this joint is fixed tight by the fixing brackets (FS750).
5. It is now time to cut and fix the wall and floor steel track (FS720) which is 40 x 50mm into position.
6. First measure the distance between the floor and the ceiling and deduct 30mm, cut the steel studs (FS700) to this height and box the studs together then fit into the steel frame at 600mm centres (where 1200 mm boards are being used).
7. Now measure the distance between the floor and the underside of the ceiling channel (CGD70), now deduct 5mm from this dimension and cut the boards to height.
8. Put into place the first board and fix the angled board clips (FS780) into the edge of the board. Fixing at approximately 250 - 300mm centres. Once all the angled clips are inserted into the edge of the board insert a small wedge at the base of the panels this will stop the board from moving. Now fix the clips with a pop rivet or 'suitable' screws to the vertical stud.
9. Now put into place the next board but leaving a space of about 400mm between this board and the board that you have just fixed. Again carefully fix into the edge your tongue board clips (FS770) at the same centres as before 250 - 300mm, making sure to place the centres of these clips just above or below the angle board clips already fixed into position.
10. Once completed repeat the sequence until you have finished that side.
11. To achieve certain standards in sound reduction insulation is required within the cavity, if this is the case insert it into the cavity now.
12. Now repeat the sequence with the boards on the opposite side, making sure to stagger the joints so that the board joints do not line up. **THIS IS VITAL FOR SOUND ATTENUATION.**
13. It is now time to cut and fix the skirting using very shallow pan head screws. Using the Finesse hidden fix skirting (FA990) fix it to your partition making sure the skirting joints do not coincide with the panel joints. Now insert the infill strip (FP990) making sure they do not coincide with the joints in the skirting.
14. Now that your partition is completed, using a mild detergent solution wipe down the partition making sure that all stains and pencil marks are removed.



ERECTION SEQUENCE of Crystal SOLID ELEVATIONS 100mm Walls (using hidden fix board clips).**INSTALLATION**

1. Set out as per your layout plan all the ceiling channel (CGD90) and abutments using a chalk line.
2. If the partition specification requires a high level of sound performance, before fixing the ceiling channel (CGD90) insert a neoprene seal as indicated in the technical manual. Using suitable fixings fix the first channel (CGD90) and then fix the next channel (CGD90), ensure the joint is tight and square.
3. Where the solid elevations change to Double Glazed elevations allow for the Solid to Glazed section (CGD125) to go from floor to ceiling and butt against the end of the ceiling channel (CGD90). So deduct 30mm from the measurement of the ceiling channel (CGD90).
4. Using suitable fixings fix the wall abutment channels (CGD90) making sure that where the wall abutment channel butts to the underside of the ceiling channel this joint is fixed tight by the fixing brackets (FS750).
5. It is now time to cut and fix the wall and floor steel track (FS720) which is 40 x 50mm into position.
6. First measure the distance between the floor and the ceiling and deduct 30mm, cut the steel studs (FS700) to this height and box the studs together then fit into the steel frame at 600mm centres (where 1200 mm boards are being used).
7. Now measure the distance between the floor and the underside of the ceiling channel (CGD90), now deduct 5mm from this dimension and cut the boards to height.
8. Put into place the first board and carefully screw the first layer of plasterboard to the studs, complete the run on one side. Now with the second layer of plasterboard fix the tongue board clips (FS770) into the edge of the boards. Fixing at approximately 250 - 300mm centres. Once all the tongue clips are inserted into the edge of the board insert a small wedge at the base of the panels this will stop the board from moving. Once the board is level fix the clips with a shallow pan head screw through the first board into the vertical stud, taking care not to damage the edge of the finished panel with your screw gun.
9. Now put into place the next board but leaving a space of about 400mm between this board and the board that you have just fixed. Again carefully fix into the edge your tongue board clips (FS770) at the same centres as before 250 - 300mm, making sure to place the centres of these clips just above or below the angle board clips already fixed into position. Now slide the plasterboard carefully so the tongue of the (FS770) slides between the finished board and the first layer making sure the tongue does not catch the edge of the opposing boards.
10. Once completed repeat the sequence until you have finished that side.
11. To achieve certain standards in sound reduction insulation is required within the cavity, if this is the case insert it into the cavity now.
12. Now repeat the sequence with the boards on the opposite side, making sure to stagger the joints so that the board joints do not line up. **THIS IS VITAL FOR SOUND ATTENUATION.**
13. It is now time to cut and fix the skirting using very shallow pan head screws. Using the Finesse hidden fix skirting (FA990) fix it to your partition making sure the skirting joints do not coincide with the panel joints. Now insert the infill strip (FP990) making sure they do not coincide with the joints in the skirting.
14. Now that your partition is completed, using a mild detergent solution wipe down the partition making sure that all stains and pencil marks are removed.



ERECTION SEQUENCE of Crystal DG SOLID Elevations 75mm Walls (using trims on the board joints).**INSTALLATION**

1. Set out as per your layout plan all the ceiling channel (CGD70) and abutments using a chalk line.
2. If the partition specification requires a high level of sound performance, before fixing the ceiling channel (CGD70) insert a neoprene seal as indicated in the technical manual. Using suitable fixings fix the first channel (CGD70) and then fix the next channel (CGD70), ensure the joint is tight and square.
3. Where the solid elevations change to Double Glazed elevations allow for the Solid to Glazed section (CGD123) to go from floor to ceiling and butt against the end of the ceiling channel (CGD70). So deduct 30mm from the measurement of the ceiling channel (CGD70).
4. Using suitable fixings fix the wall abutments making sure that where the wall abutment channel butts to the ceiling channel this joint is fixed tight by the fixing brackets. It is now time to cut and fix the wall and floor track (FS720) in position.
5. When completed measure the distance between the floor and the ceiling and deduct 30mm, cut the steel studs (FS700) to this height and fit into the steel frame at 600 mm centres (assuming that 1200mm boards are being used).
6. Now measure the distance between the floor and the underside of the ceiling channel (CGD70) and deduct 5mm from this dimension and cut the boards to height.
7. Put into place the first board checking that it is level then slide into position your stud so that half of the stud (FS700) is covered by the board. Now fix the board to the steel stud using drywall type screws, taking care not to over tighten the screws as this will damage the edge of the board.
8. Now put into place the next board, making sure that it is tight up against the board that you have just fixed. Again carefully fix your board using the same fixings.
9. Once that is completed repeat the sequence until you have finished that side.
10. If the partition is to be fire rated the correct insulation must be inserted into the cavity now.
11. To achieve certain standards in sound reduction insulation is required within the cavity, if this is the case insert the correct insulation to achieve the required dB rating into the cavity now.
12. Now repeat the sequence on the opposite side, making sure to stagger the joints so that the board joints do not line up. **THIS IS VITAL FOR SOUND ATTENUATION.**
13. It is now time to cut and fix the skirting using very shallow pan head screws. Using the Finesse hidden fix skirting (FA990) fix it to your partition making sure the skirting joints do not coincide with the panel joints. Now insert the infill strip (FP990) do not coincide with the joints in the skirting.
14. Now measure and cut the clamping strip (FS745) Fix into place over the board joints making sure to use suitable fixings.
15. Measure and cut the cover trim, once in place on top of the clamping strip tap on the cover trim using a small hammer or rubber mallet and a timber block so that the cover trim is not damaged.
16. Now that your partition is completed, using a mild detergent solution wipe down the partition making sure that all stains and pencil marks are removed.



ERECTION SEQUENCE of Crystal DG SOLID Elevations 100mm Walls (using trims on the board joints).**INSTALLATION**

1. Set out as per your layout plan all the ceiling channel (CGD90) and abutments using a chalk line.
2. If the partition specification requires a high level of sound performance, before fixing the ceiling channel (CGD90) insert a neoprene seal as indicated in the technical manual. Using suitable fixings fix the first channel (CGD90) and then fix the next channel (CGD90), ensure the joint is tight and square.
3. Where the solid elevations change to Double Glazed elevations allow for the Solid to Glazed section (CGD125) to go from floor to ceiling and butt against the end of the ceiling channel (CGD90). So deduct 30mm from the measurement of the that ceiling channel (CGD90).
4. Using suitable fixings fix the wall abutments making sure that where the wall abutment channel butts to the ceiling channel this joint is fixed tight by the fixing brackets. It is now time to cut and fix the wall and floor track (FS720) in position.
5. When completed measure the distance between the floor and the ceiling and deduct 30mm, cut the steel studs (FS700) to this height and fit into the steel frame at 600 mm centres (assuming that 1200mm boards are being used).
6. Now measure the distance between the floor and the underside of the ceiling channel (CGD90) and deduct 5mm from this dimension and cut the boards to height.
7. Put into place the first layer of plasterboard checking that it is level then slide into position to your stud so that half of the stud (FS700) is covered by the board. Now fix the board to the steel stud using drywall type screws, taking care not to over tighten the screws as this will damage the edge of the board.
8. Now put into place the next board, making sure that it is tight up against the board that you have just fixed. Again carefully fix your board using the same fixings.
9. Once that is completed repeat the sequence until you have finished that side.
10. If the partition is to be fire rated the correct insulation must be inserted into the cavity now.
11. To achieve certain standards in sound reduction insulation is required within the cavity, if this is the case insert the correct insulation to achieve the required dB rating into the cavity now.
12. Now repeat the sequence on the opposite side, making sure to stagger the joints so that the board joints do not line up. **THIS IS VITAL FOR SOUND ATTENUATION.**
13. It is now time to cut and fix the skirting using very shallow pan head screws. Using the Finesse hidden fix skirting (FA990) fix it to your partition making sure the skirting joints do not coincide with the panel joints. Now insert the infill strip (FP990) do not coincide with the joints in the skirting.
14. Now measure and cut the clamping strip (FS745) Fix into place over the board joints making sure to use suitable fixings.
15. Measure and cut the cover trim, once in place on top of the clamping strip tap on the cover trim using a small hammer or rubber mallet and a timber block so that the cover trim is not damaged.
16. Now that your partition is completed, using a mild detergent solution wipe down the partition making sure that all stains and pencil marks are removed.



ERECTION SEQUENCE of Crystal DG FULLY GLAZED ELEVATION**INSTALLATION**

1. Set out as per your drawing the ceiling and wall abutments using head & wall channel (CGD130) using a chalk line.
2. Now using a chalk line set out the base channel (CGD140) making sure to allow for the main section (CGD120) to go from the underneath of the ceiling channel (CGD130) to the floor at door modules. So that the base channel butts up against the fixed main section.
3. If the partition specification requires a high level of sound performance, before fixing the ceiling & wall abutments (CGD130) insert a neoprene seal as indicated in the technical manual. Using suitable fixings fix the first ceiling channel (CGD130) and then fix the jointing plates (CB80). This ensures a square and flush face to that joint.
4. Using suitable fixings fix the wall abutments, making sure where the wall abutment channel butts to the ceiling channel this joint is fixed tight by using two fixing brackets (CB60). Where a glazed module meets a solid module the main section used as a mullion must go from floor to ceiling.
5. Once completed fix the base chair (CGD140) directly to the floor using a fixing method approved by the architect or client. Taking care when drilling to place the drill bit into the small "V" for location .
6. Now carefully mark out using centre lines for your internal mullions. Making sure they are marked out plumb. Now mark out for the mullion bracket (CGD168) using the centre lines top and bottom. Fix the brackets into place with the drills and screws provided.
Please see the technical manual for full fixing full details
7. With care measure between the ceiling channel and base chair for the vertical mullion posts (CGD160) and the same for the mullion cover (CGD164) cut both to length. Now carefully clip the mullion post (CGD160) on to the mullion brackets already fixed into place. Do not use excessive force, as this could damage the brackets and scratch the base chair and ceiling channel.
8. It is now time to make the necessary cut outs top and bottom so the cover fits over the brackets. Also a small cut out of the clip in legs will be required for the blind mechanism if being used.
Please see the technical manual for cut out details
9. When all the mullions are in place (only if no integral blinds are to be used where the cavity within the mullion post is required for services) you can now clip the mullion cover (CGD164) into the mullion post. Take care when fitting mullion cover (CGD164) into the mullion post (CGD160) Support may be required at the back of the mullion post so as not to push the mullion post (CGD160) off the brackets (CGD168) Again making sure not to scratch the ceiling channel and base chair.
10. When all the mullions posts (CGD160) are fixed measure carefully and cut to length the correct glazing gaskets for the size of glass to be used. CGD194 for 10 - 12.8mm glass & CGD190 for 6 - 8mm glass. When inserting the glazing gaskets make sure to place them onto the correct shoulders
Please see the technical manual for glazing gasket configurations
11. Now do the same for the base chair and ceiling channel, once in place measure and cut to size the mullion glazing rod (CGD166) but do not put these in until after you have the glass in place.



12. Now measure from the inside of the head channel (where the glass is inserted) to the outside shoulder of the base chair (where the glass sits) for the glass sizes and deduct between 5 - 10mm (depending on site levels) plus the depth of the glass packers, this will be the length required.
13. Now measure from the centre of the mullions and deduct 6mm this will give you a clearance of 3mm for the glass and a coverage of 8mm either side, this will be the width required.
14. Now insert the glass on one side of the partition once complete using the correct glass packers and fit the outer gasket CG110 then insert the mullion glazing rod (CGD166) supporting the mullion post on the opposite side. Now fit the glass on the opposite side.
15. Now that your partition is completed, using a mild detergent solution wipe down the partition making sure that all stains and pencil marks are removed.



ERECTION SEQUENCE of Crystal DG DOOR MODULES WITHIN A SOLID RUN

1. The Crystal door stop sets that you receive are fully prepared for installation, once the vertical legs have been cut to suit site dimensions.
2. The Crystal door head is notched both ends and the legs are square cut both ends. One of the legs (left or right depending on the handling of the stops) will be machined to take the lock keep and the other will be machined for three or more stainless steel hinges for timber doors and three or more patch hinges for glass doors, depending on door height & type.

INSTALLATION

3. When setting out the vertical posts (CGD70) for a door opening allow a door width of 838mm + 60mm for CGD70 + 7mm for the door stop (FA532) to be fitted around the steel and panel element + 6mm for clearance around the door. So the dimension between the vertical steel will be the door size 838mm + 6 + 7 + 22mm = 873mm overall.
And the dimensions between vertical posts CGD70 will be door size 838mm + 6 + 7 = 851mm Overall.
Please see details in the Crystal technical manual for full Door Module setting out Dimensions
4. When setting out the main section (CGD70) at the head allow for the door opening of 2040 mm + 3.5mm for the door stop + 3 mm for clearance between door and the stop. So the height of the main section (CGD70) transom at the head is the door height 2040mm + 3.5 + 3 = 2046mm PLUS an allowance at the base of the door for clearance. From floor to steel transom allow an additional 11mm +.

Please see details in the Crystal technical manual under SETTING OUT DETAILS

5. Now put into place the vertical door frames and then carefully put in place the head. Now fix together with brackets at each joint and pop rivet the door frames to the steel behind.
6. Once door frames are securely fixed, unpack your door stop set and measure between the floor and the underneath of the door frame head and add 2 mm. Taking the door stops cut them to length, making sure the ends that you cut are from the top of the legs and not the bottom. As the lock box is machined 1000mm from the base, to match the standard spindle height of 1000mm.
7. Slide the smoke seal into the head and legs, take the legs and clip into position. Now carefully do the same with the head.
8. Now fix the lock keep into position using suitable fixings.
9. Now that your door module is completed, using a mild detergent solution wipe down the partition door frame and surrounding modules making sure that all stains and pencil marks are removed.



**ERECTION SEQUENCE of Crystal DG DOOR MODULES using CGD120 & FA532
WITHIN A FULLY GLAZED RUN**

1. The Crystal door stop sets that you receive are fully prepared for installation, once the vertical legs have been cut to suit site dimensions.
2. The door head is mitred both ends and the legs are mitred one end and square cut on the other ends. One of the legs (left or right depending on the handling of the stops) will be machined to take the lock or latch keep and the other will be machined for the required number of lift off stainless steel hinges for timber doors or the required number of patch hinges for glass doors, depending on door height, width and glass thickness.

INSTALLATION

3. When setting out the main post (CGD120) for a door opening allowing for a standard **Timber** door width of 838mm, the setting out dimension recommended are 838mm for the door + 7mm for the door stop + 6mm for clearance around a timber door. So the dimension between the vertical main posts (CGD120) will be the door size $838\text{mm} + 6 + 7 = 851\text{mm}$ overall.
And the dimension including the main posts (CGD120) will be door size $838\text{mm} + 6 + 7 + 30 + 30 = 911\text{mm}$ Overall. Please see details in the Crystal technical manual.
4. When setting out the main post (CGD120) for a door opening allowing for a standard **Glass** door width of 838 mm, the setting out dimension recommended are 838mm for the door + 7mm for the door stop + 3mm for clearance around a glass door. So the dimension between the vertical main posts (CGD120) will be the door size $838\text{mm} + 6 + 7 = 851\text{mm}$ overall.
And the dimension including the main posts (CGD120) will be door size $838\text{mm} + 6 + 7 + 30 + 30 = 911\text{mm}$ Overall. Please see details in the Crystal technical manual.
5. With care measure between the ceiling channel (CGD130) and the floor for the vertical main posts (CGD120) and cut both to length. Now carefully fix the main posts to the underside of the ceiling channel and the floor using two fixing brackets (CB60) each end, making sure they are plumb.
6. Now carefully clip into ceiling channel between vertical the main posts (CGD120) the Door Head adapter (CGD133). Now clip in the door stop (FA532) into CGD133 and then into the main posts. Carefully fix the FA532 door stop through the slot provided being carefull not to catch the aluminium surface with the drill chuck. Then screw securely to the main post (CGD120) now fix the acoustic seal to both legs and head.
7. Now fix the lock keep or lock box into position using suitable fixings and fix the hinges into place.
8. Now that your door module is completed, using a mild detergent solution wipe down the partition door frame and surrounding modules making sure that all stains and pencil marks are removed.

