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FOREWORD

“REFORM” Puttyless Roof Glazing as used in the manufacture of “Reform” Roof Lights has been on the market for more than sixty years, undergoing continuous development in accordance with modern trends and demands. Roof Lights glazed on this system are scientific in construction and absolutely weatherproof, alternative types being available with either Rolled Steel or “Alumalloy” Glazing Bars, the latter offering considerable advantages under the right conditions. Both forms of section are of equal efficiency, the glass sheets being softly bedded on stout asbestos cord and free to expand and contract under normal changes of temperature. Adequate channels to carry off condensation are provided.

“Reform” Roof Lights have steadily increased in favour for the top lighting of Offices, Warehouses, Schools, etc, this method ensuring even-distribution of light and providing the means of adequate ventilation, either by suitably arranged opening portions or by fixed louvre ventilation of special design.

“Reform” Lantern Lights are constructed with vertical upstands of Rolled Steel Sections, the standard height being 18 inches. This can be increased or decreased to suit individual requirements. Ventilators—top, bottom or centre hung—are inserted where necessary.

Roofs are constructed with R.S.J. Ridge and “Reform” Lead Capped Galvanized Steel Hip and Glazing Bars complete with all fittings, lead flashings to ridge and hips, and lead draught fillets at eaves. Alternatively, the roofs can be constructed with Aluminium Alloy Ridge and Hip sections, with “Reform” Alumalloy Glazing Bars, complete with all fittings and flashings.

“Reform” Skylights are similarly constructed to “Reform” Lantern Lights, with either R.S. or “Alumalloy” Glazing Bars, but without vertical upstands.

Both Lanterns and Skylights can be constructed with either hipped or gabled ends, and light steel trusses are included when necessary.

Enquiries should state

(1) Over-all dimensions of curbs and whether of wood or concrete.
(2) Height of upstands, if not standard.
(3) Position and number of opening vents, whether single or double panes, and whether horizontally pivoted, top or bottom hung. Also method of operation, viz. by cords, or long arm, or portable rack or screw rod gear. If the last, give sketch showing arrangement of rods and position of gearboxes.
(4) Type of glass. This is usually ½-in. cast or ¼-in. wired cast throughout, or vertical upstands can be glazed with clear sheet or with white or tinted figured rolled or cathedral glasses.
(5) If panels of fixed glass ventilating louvres are required in upstands, give numbers of panels and positions.

Special Roof Lights can be constructed to suit practically any design.
ALL FITTINGS for "Reform" Roof Lights are designed with the greatest care to ensure easy fixing, strength and rigidity in use and maximum durability. The special use of each unit is described in the fixing instructions on facing page.

HAYWARDS LOUVRE FRAME (handed)
Pat. No. 392, 112

D THREE-WAY RIDGE-PLATE

D1 FIVE-WAY RIDGE PLATE

C HIP PLATE

C1 JACK BAR FITTING (right hand)

E PURLIN CLIP FOR STEEL FIXING

B ALUMINIUM-BRONZE BOTTOM STOP

A CORNER BRACKET

NOTE: To ensure speed and efficiency when erecting, the diagram given on facing page should be carefully followed in conjunction with the instructions.
THE FRAMES for sides and ends should be erected first, care being taken to see that numbers painted on each section agree where adjoining each other. It is essential to have the Light absolutely square before fixing frames to the curb. The R.S.J. ridge should now be packed up to its approximate position and the heavy section hip bars (centre drilled at top) fixed to corner brackets connected to corners of eaves angles with 1 in. by \( \frac{3}{4} \) in. cntsk. screws. These are now secured to ridge plates with 1\( \frac{1}{2} \) in. by \( \frac{3}{16} \) in. cntsk. screws, through holes in centre of bar. Packing to the ridge should be removed to allow it to settle into position, care being taken that ridge is kept level and parallel to the sides. Purlin clips should now be assembled and entered loosely in holes in back of angle curbs, also to ridge to receive top ends of glazing bars. All the long bars should next be fixed into position and purlin clips well tightened up with aid of box-spanner. Jack bars are now attached to hip plates, but before fixing these a good bedding of mastic should be laid on the plate, so that when the bar is screwed up tight surplus mastic will squeeze out, thus ensuring a perfect joint. The excess mastic should be trimmed off. In fixing these bars to angle curb, care should be taken that the centre of bars at top of jack-bar are the same as at bottom, so that they are parallel to one another.

Having fixed all the bars, asbestos cord should be run round them and tied, the knot being kept always at top of bars, so as not to foul the glass. The sides are now glazed, being back putted in and secured with the wire springs supplied, then fronted with neat putty fillet. The lead draught fillets should be cut and fitted to top of angle curb.

ROOFS

Glass should be laid in and held temporarily by glass stops at bottom of bar. When two adjacent panes are laid in position the lead cap is rolled down over the bar and dressed close to the stem of the bar and on to glass. Delta Spring Clips should now be placed where holes are bored to receive them and the lead caps pierced through to take the \( \frac{3}{8} \)-in. R.H. brass screw which secures clips with nut. Having glazed the roof, the 4\( \frac{1}{2} \)-in. girth lead supplied should then be dressed over the hip bars on to the glass and secured by means of \( \frac{3}{8} \)-in. by \( \frac{3}{8} \)-in. R.H. screw washer and nut. 9-in. girth lead is carefully dressed over the R.S.J. ridge and down on to the glass, being bossed down at ends of ridge. Glass stops should now be taken off, one pair at a time, and lead cap dressed as above, then stops refixed over the lead cap.

FIXING SKYLIGHTS

The methods described for Lantern Lights are applicable for Skylights except that angle curb is laid direct on to the foundation curb instead of on to sash side frames.

VARIOUS FITTINGS

referred to in diagram and above are illustrated on facing page.
"REFORM" No. 421 TYPE LANTERN LIGHTS (HIPPED)

"REFORM" GLAZING BAR

BOTTOM STOP

LEAD FLASHED R.S.J. RIDGE

PURLIN CLIP

ANGLE EAVES

LEAD DRAUGHT FILLET

PURLIN CLIP

SECTION THRO' VENT

LEAD FLASHING BY BUILDER

ASPHALTE

CONCRETE

DETAILS SHEWING FIXING TO CONCRETE CURB

1½" SQ. HOLES 2½ DEEP TO TAKE FIXINGS

PART HORIZONTAL

ASPHALTE SIZES TAKEN OF ALL ASPHALTE

HAYWARDS LANTERN LIGHT No. 421 TYPE WITH HIPPED ENDS
"REFORM" No. 421 TYPE LANTERN LIGHTS (GABLE)

PART SECTION THRO' GABLE END

SECTION THRO' CORNER POST

HAYWARDS LANTERN LIGHT No. 421 TYPE WITH GABLED ENDS

DETAILS SHEWING FIXING TO WOOD CURB

HAYWARDS LTD · UNION STREET · LONDON S·E·1
"REFORM" No. 431 TYPE SKYLIGHTS (HIPPED & GABLE END)

"REFORM" GLAZING BAR

BOTTOM STOP

LEAD FLASHING BY BUILDER

PURLIN CLIP

LEAD DRAUGHT FILLET

1½ SQ. HOLES
2½ DEEP TO TAKE FIXINGS

SIZES TAKEN OF ALL ASPHALTE

CONCRETE

DETAILS SHEWING FIXING TO CONCRETE CURB

PURLIN CLIP

RE detailed through ridge

PART SECTION THRO' GABLE END

HAYWARDS LTD · UNION STREET · LONDON S·E·1
SPECIAL DETAILS FOR PURPOSE MADE ROOF LIGHTS

LEAD FLASHING

"REFORM" GLAZING BAR

PURLIN CLIP

3"x2"x¼" ANGLE

DETAIL OF ANGLE WALL PLATE

PLASTER

CEMENT FILLET

DETAL OF SASH FRAME TO WALL

STEPPED FLASHING TO WALL

"REFORM" GLAZING BAR

DETAIL OF GLAZING BAR TO WALL

PLASTER

3", BREEZE

4"x2" CHANNEL

DETAIL OF MULLION TO TAKE PARTITIONS

TEER AFTERT

SIZES OF SCANTLINGS TO SUIT SPAN

FLAT TIES & STRUT

RAFTERS, TIE BARS & STRUT

CURVED & FRAMED TRUSS

TYPICAL TRUSS ELEVATIONS

HAYWARDS LTD - UNION STREET - LONDON S.E.1

PAGE NINE
TYPICAL STANDARD DETAILS SHOWING ARRANGEMENT AND SIZES OF VENTILATORS

Enquiries and Orders should mention Code Numbers

<table>
<thead>
<tr>
<th>CODE</th>
<th>SIZE</th>
<th>NO OF VENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL44</td>
<td>4'0&quot;x4'0&quot;</td>
<td>2</td>
</tr>
<tr>
<td>SL64</td>
<td>6'0&quot;x4'0&quot;</td>
<td>2</td>
</tr>
<tr>
<td>SL84</td>
<td>8'0&quot;x4'0&quot;</td>
<td>2</td>
</tr>
<tr>
<td>SL104</td>
<td>10'0&quot;x4'0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>SL124</td>
<td>12'0&quot;x4'0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>SL88</td>
<td>8'0&quot;x8'0&quot;</td>
<td>2</td>
</tr>
<tr>
<td>SL108</td>
<td>10'0&quot;x8'0&quot;</td>
<td>4</td>
</tr>
<tr>
<td>SL128</td>
<td>12'0&quot;x8'0&quot;</td>
<td>4</td>
</tr>
</tbody>
</table>
"REFORM" LANTERNS & SKYLIGHTS

PLANS
SHOWING CENTRES OF HOLES IN CURBS TO RECEIVE RAWLBOLTS

PAGE ELEVEN
"REFORM ALUMALLOY" LANTERN LIGHTS (HIPPED) No. 421a TYPE

"REFORM" GLAZING BAR

ALUMINIUM ALLOY EAVES SECTION

COMBINED BOTTOM FIXING & GLASS STOP

STEEL SASH DETAIL THRO' RIDGE

EXECUTION CORNER POST

LEAD FLASHING BY BUILDER

ASPHALTE

CONCRETE

DETAILS SHEWING FIXING TO CONCRETE CURB

HAYWARDS LTD - UNION STREET - LONDON S.E.1
The methods described on page 5 for fixing "Reform" Steel Lantern Lights and Skylights apply also to "Reform Alumalloy" Lights in general principle.
"REFORM" HAYSTACK LANTERNS

DETAIL THRO' RIDGE

"REFORM" GLAZING BAR

BOTTOM STOP

PURLIN CLIP

LEAD FLASHED R.S.J. RIDGE

LEAD DRAUGHT FILLET

PURLIN CLIP

BOTTOM HUNG CASEMENTS

1 1/2" SQ. HOLES 2 1/2" DEEP TO TAKE FIXINGS

LEAD FLASHING BY BUILDER

ASPHALTE

CONCRETE

DETAILS SHEWING FIXING TO CONCRETE CURB

PAGE FORTY-FIVE

HAYWARDS LTD . UNION STREET . LONDON S.E.1
THIS type of Lantern, constructed to meet the requirements of the L.C.C., is designed to provide emergency ventilation in case of fire in a theatre, and thus to prevent the fire spreading to the auditorium. The Haystack Lantern has hinged opening portions on all sides, held closed by a gear consisting of wire ropes and pulleys and fusible link with patent quick release. The quick release operates immediately the handle is pulled by a fireman or other person in case of emergency. The link itself, of course, is an automatic safety device which melts at the requisite temperature, thus operating the opening gear should the quick release not be operated by hand. The gear includes check springs which prevent the opening portions striking the roof when the gear is released. The ventilation provided by the open Lantern has an important effect upon the localization of the fire. The roofs of these Lanterns can be covered either with corrugated asbestos sheeting or "Reform" Glazing, with ¼" wired cast glass, according to Local Authorities' requirements, the sides being glazed with thin sheet glass. Haywards make a speciality of this important type of Lantern.
OPENING GEAR FOR LANTERNS TYPICAL EXAMPLES

GEAR ILLUSTRATED

1. Portable Rack Gear with revolving handle long arm.
2. Spring catches and friction pivots for operating by long arm.
3. Spring catches and cup pivots for operating by cords.
4. Centre-hung vents with screw rod gear.
THE GLASS most frequently used for Lanterns and Skylights is \(\frac{1}{4}\) in. thick and of the following types:

Rough Cast, Wired Cast and Georgian Wired Cast.

The following are the practical maximum lengths advisable for glass panes,

\(\frac{1}{4}\)-in. Rough Cast \(\ldots\) Up to 10 ft.
\(\frac{1}{4}\)-in. Wired Cast and Georgian Wired Cast \(\ldots\) Up to 11 ft.

The adjacent table gives the approximate absorption of light of roofing glasses, together with other glasses frequently used for more decorative purposes in "Reform" Lantern Lights. Skylights, Laylights and Dome Lights.

**ABSORPTION OF LIGHT**

<table>
<thead>
<tr>
<th>Glass</th>
<th>Light Loss</th>
<th>Heat Absorption</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-in. Cast</td>
<td>16%</td>
<td>80%</td>
</tr>
<tr>
<td>4-in. Wired Cast</td>
<td>22%</td>
<td>10%</td>
</tr>
<tr>
<td>4-in. Georgian Wired Cast</td>
<td>22%</td>
<td>10%</td>
</tr>
<tr>
<td>4-in. Polished Plate</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Double Rolled Cathedral</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>Plain Cathedral</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Large Arctic</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td>Small Arctic</td>
<td>15%</td>
<td>12%</td>
</tr>
<tr>
<td>Large Hammered</td>
<td>12%</td>
<td>19%</td>
</tr>
<tr>
<td>Small Hammered</td>
<td>12%</td>
<td>19%</td>
</tr>
<tr>
<td>Pin-head Morocco</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>&quot;Vita&quot;</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>4-in. &quot;Calorex&quot; Cast</td>
<td>39%</td>
<td>80%</td>
</tr>
<tr>
<td>4-in. &quot;Calorex&quot; Cast</td>
<td>39%</td>
<td>80%</td>
</tr>
<tr>
<td>4-in. Non-actinic</td>
<td>35%</td>
<td>80%</td>
</tr>
</tbody>
</table>

The "Absorption of Light" table has been compiled in collaboration with the National Physical Laboratory and Messrs Pilkington Bros Ltd, St Helens, Lancs.

A complete Report by the National Physical Laboratory on the durability, weatherproofness and strength of the "Reform" Glazing System is available at our Head Office for the inspection of any enquirer.
HAYWARDS Steel Framed and Glazed Laylights are fitted under "Reform" Lantern Lights or Skylights as a definite addition to the appearance and comfort of the rooms beneath. Ventilating panels can be supplied as required to augment the improved heat-equalization obtained by the use of the Laylight. Constructions vary from the plainest utilitarian designs to those having a decisively decorative character. Facilities for cleaning can be provided by the addition of side-hung access doors in Lantern sides, gabled-ends of Skylights, or alternatively, panes of glass in Laylights can be framed in stout copper came to lift out.

Illustrations show examples of this important form of construction.
HAYWARDS manufacture Conical Skylights and Domed Lights, as typical examples illustrated, as well as spherical and rectangular glass domes, both the latter being made in one piece, usually of rough-cast plate about $\frac{3}{8}$ in. thick.

Roof Lights of unusual design to meet special conditions are in frequent demand. Haywards are always glad to quote for any type, and to place their long and varied experience at the disposal of customers.

"Reform" Roof Glazing, Garage Shelters, Verandahs, Canopies, etc. are illustrated and described in other sections of Haywards Catalogue. Enquiries are invited.
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Iron-framed Pavement Lights, Etc.
Metal Windows—Purpose-made
Steel Factory Sashes
STEELOCK Internal Stairs
Fire Escape External Stairs
Steel Fire-resisting Doors
JHILMIL Steel Fire-resisting Lath
Ventilators, Ductwork, Dust Chutes
Glazed Kitchen Hoods
Sheet and Architectural Metalwork
Etc. Etc.