

SHAW SAVILL & ALBION COMPANY LIMITED.

34, Leadenhall Street, London, E.C.

SPECIFICATION

for

STEAMER

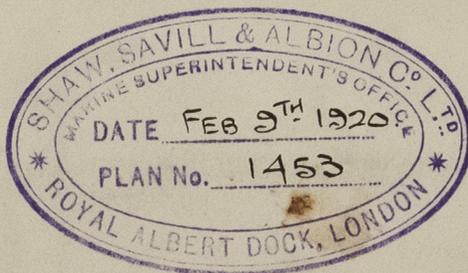
INSULATION

"TAIROA"

T. S. S. "~~PADAYCA~~".

908.

No. ~~88~~



S. S. TAIROA

NEWCASTLE ON TYNE.

Report No. 73225.

(1)

W439-0281.1 (1/19)

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S. S. No. ~~888~~
908

SPECIFICATION FOR THE INSULATION OF THE NUMBERS

~~TENDERS~~ are hereby called for to Insulate the Numbers 1, 2, 4 and 5 Holds, and Deep Main Decks, as shown on plans, together with the Ship's Provision Chambers, Brine Tank Rooms, Fan Rooms, Evaporators and all Piping, etc. etc., either leading to or from the different compartments of the S.S. No. ~~888~~⁹⁰⁸ now building for the Company by Messrs. Sir W. G. Armstrong Whitworth & Co. Ltd. at Newcastle on Tyne, and which will be fitted with the Brine Pipe System of C.O.² Refrigeration by the Owners' Contractors.

MATERIAL. The Insulating material to be silicate cotton of best quality, which does not exceed 15 lbs. per tightly pressed cubic foot, with washed cow hair where specified. *with latches*

All grounds to be of best quality white deal, coamings and all framings to be of *latch* pitch pine, and the matching throughout to be of white deal, of good quality, free from loose knots, shakes and sap wood.

The tongues and grooves to be perfect in all material used, and the boards are not to be beaded.

BOTTOM INSULATION. The Shipbuilders will supply and fix a 4 inch by 3 inch angle (with large angle up), rivetted to tank covering plate 3 inches inboard from line of limbers on each side, extending the whole length of the hold, caulked watertight both on tank top and at bulkhead attachment.

Angle to be bevelled to suit angle of coaming.

The tank top, after angles are fitted, will be coated with $\frac{1}{2}$ inch of Wailes, Dove's bitumastic cement by the Shipbuilders. ✓

Coamings $2\frac{1}{2}$ inches thick of suitable depth to be

securely bolted to the angle bar; between these coamings across the tank top, grounds 8 inches by 3 inches are to be laid over each floor.

In the way of hatchways and extending two floor spaces beyond the hatch at each end, intermediate grounds are to be laid. On top of these grounds two thicknesses of white matching, 1 inch and $1\frac{1}{2}$ inches respectively, are to be nailed, and underneath the hatchways seasoned elm ^{board?} doubling 2 inches thick is to be spiked down, extending in Nos. 1 and 2 holds 2 feet further in each direction than the hatchway above, to be chamfered at the edges, and the seams caulked and payed with marine glue.

In Nos. 4 and 5 holds the doubling to extend between the tunnels to the forward bulkhead, carried over tunnel crowns and 4 feet on floor from outer side of each tunnel. X

TURN OF BILGE. Grounds 3 inches by 2 inches to be bolted on the face of each floor, and carried as far up as the first stringer; over these are to be nailed two thicknesses of $1\frac{1}{4}$ inch white matching, with grounds 5 inches high by 3 inches thick in line with each floor, covered over with two linings of 1 inch and $1\frac{1}{2}$ inch respectively, the space between packed with silicate.

BILGE SCUPPERS. A trapped scupper to be fitted through the end bilge hatches on each side in each insulated hold as shown on detail drawing.

The scupper to be arranged vertically in the bilge and to be 1 inch clear of the cement when the hatch is in position.

A wooden cage to be built over the top of each scupper.

The following is the number of scuppers to be fitted:-

| | | |
|-------|------|-----------|
| No. 1 | Hold | 2 |
| No. 2 | " | 4 |
| No. 4 | " | 4 |
| No. 5 | " | 4 |
| Total | | <u>14</u> |

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LIMBER HATCHES. A double line of limber hatches are to be fitted fore and aft in each compartment, also 'thwartship hatches between tunnels in way of scupper pipes, etc., in the Nos. 4 and 5 holds.

Those into the bilges to have a clear opening of 1 foot 9 inches. All to be constructed as follows:- The sides of 2 inches, the top and bottom of $1\frac{1}{4}$ " & 1" respectively, and the inner linings of $\frac{3}{4}$ inch, the coamings $2\frac{1}{2}$ inches thick, and each hatch filled with 5 inches washed cow hair, and to be not more than two frame spaces long, fitted with 2 inch by 5 inch stiffening grounds, one in centre and one in way of each ring bolt.

Each stretch to have three key hatches, and to have a plug in the bulkhead to give access to the end bays.

Each hatch to have two $\frac{3}{4}$ inch galvanized iron ring bolts and nuts secured through stout plate washers, with oval hole in top washer to permit ring to lie flat on the hatch.

Grating hatches of heavy material and Troop pattern to be supplied and fitted in way of all key hatches for ventilating purposes.

All hatches to be numbered and marked as required, bottoms, sides and coamings to have two coats of paint.

MANHOLE OPENING. Around each manhole a 4 inch by 3 inch angle with corners welded will be rivetted down to the tank top, and caulked watertight by the Shipbuilders, the four inch angle will be placed upwards and bevelled to suit angle of coaming.

Framed coamings $2\frac{1}{2}$ inches thick, of suitable depth to be securely bolted to inside of angle bar, into which is to be fitted hatches similar in detail of construction to those specified for limbers. The coamings to be bedded on thickly painted tarred felt and made Watertight.

TUNNEL RECESS. To have tops, sides and end fitted with grounds, etc., etc., and insulated in a similar manner (with 12 inches of silicate) to the bulkhead adjoining, but the covering boards are to be each $1\frac{1}{4}$ inch matching.

TUNNELS. Grounds 10 inches deep by 3 inches thick are to be cut to sweep of tunnel, and attached with $\frac{3}{4}$ inch bolts to the stiffeners.

Where the spacing of the stiffeners exceeds 22 inches, an additional ground to be laid, secured to the tunnel by angle lugs in the manner specified for bulkhead grounds, and outside of all two thicknesses of $1\frac{1}{4}$ inch matching, breaking joints, tightly packed with silicate cotton.

A portable strake 12 inches wide on the crown of the tunnel is to be fitted for sighting purposes, secured in place with stout brass screws.

Elm doubling to be fitted under hatchways. (See "Bottom Insulation".)

American elm hoops $2\frac{1}{2}$ inches by $2\frac{1}{2}$ inches, bent to shape having upper edges chamfered, to be secured round the tunnels, spaced 9 inches apart.

Elm chafing blocks spaced 20 inch centres, 3 inches thick, of sufficient depth to protect brine grids, to be securely fastened to side of tunnel.

Hardwood steps to be securely fixed to elm battens over tunnels to form ladders.

SIDE INSULATION. Grounds 3" x 2" thick are to be bolted on to the face of the Channel Frames.

The grounds to be well bedded on thickly painted tarred felt and secured in place with $\frac{5}{8}$ " bolts.

The Bolts to be spaced not more than 3'6" apart and one bolt to be near the end of each ground.

On the face of the grounds two thicknesses of matching

$\frac{3}{4}$ " and 1" respectively are to be nailed.

The space behind the boarding to be tightly packed with silicate cotton.

Plugs to be fitted over all ring bolts and cargo connections.

The first stringer above the turn of the bilge in each Hold is to be made watertight with cement before the side insulation is put in place.

Where the Frames are joggled, filling in pieces of suitable depth are to be fitted.

BULKHEAD INSULATION. The Bulkhead at the fore end of No. 1 Lower Hold and Between Decks will be treated as follows:-

12" Grounds $2\frac{1}{2}$ " thick, spaced not more than 26" centres, to be bolted to angle lugs or stiffeners, and having two linings of $\frac{3}{4}$ " and 1" matching respectively nailed in front, with the interior space packed tightly with silicate.

The Bulkhead at the after end of the No. 1 Lower Hold to have 8" x $2\frac{1}{2}$ " grounds bolted flush with the face of the 11" Channels, spaced not more than 30" centres. Any intermediate grounds required to be the full depth of the insulation, and bolted to angle lugs rivetted to bulkhead. All to be lined over with two thicknesses of $\frac{3}{4}$ " and 1" lining.

At the after end of the No. 1 Between Decks the grounds to be 8" x $2\frac{1}{2}$ " similarly secured to lugs and stiffeners, and treated with silicate and two thicknesses of match lining as before described.

The Bulkhead at the forward end of the No. 2 Lower Hold to have grounds 3" deep x $2\frac{1}{2}$ " thick, spaced 30" centres attached to the Bulkhead by angle lugs, and treated with match lining and silicate as before described.

The Bulkhead at the forward end of the No. 2 Between Decks to be treated similar to the Lower Hold but with 4" instead of 3" grounds.

The Bulkhead at the after end of the No. 2 Lower Hold and Between Deck to be treated similar to the Bulkhead at the after end of No. 2 Lower Hold.

The Bulkhead at the forward end of the No. 3 Lower Hold and Between Deck to have grounds 4" deep x $2\frac{1}{2}$ " thick, spaced 22" centres, faced with two thicknesses of matching $\frac{3}{4}$ " and 1" respectively, and filled in with silicate cotton.

The Insulation in the No. 3 Hold to be protected by galvanized sheet iron No. 16 B.W.G., secured with stout brass button headed screws, spaced closely together.

The forward Bulkhead of No. 4 Hold and Between Decks to have grounds 12" x $2\frac{1}{2}$ ", spaced 30" centres and treated as to match lining and silicate as before described.

The Bulkhead at the after end of No. 4 Hold and Between Deck to have grounds 4" deep x $2\frac{1}{2}$ " thick, spaced 30" centres, attached to the Bulkhead by angle lugs, and treated with match lining and silicate as before described.

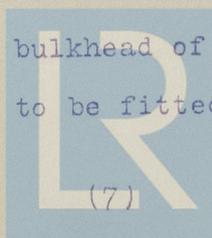
The Bulkhead at the forward end of the No. 5 Hold and Between Deck to have grounds 10" deep x $2\frac{1}{2}$ " thick, spaced not more than 30" centres, and treated as regards linings and silicate as before described.

The after Bulkhead of No. 5 Lower Hold to be treated similar to the after Bulkhead of No. 2 Hold.

The after Bulkhead in No. 5 Lower Hold and Between Deck to be treated similar to the after Bulkhead in No. 2 Lower Hold and Between Deck.

The forward Bulkhead of the No. 6 Hold to be treated similarly to the forward bulkhead of the No. 3 Hold.

Independent grounds to be fitted where an increase of



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insulation is necessary in the way of projecting stiffeners or other obstructions.

Where brackets project at foot of Bulkheads the grounds and linings are to be brought out to suit.

The face of the Channel Bars, etc., in every case to be covered with thickly painted tarred felt.

The angle lugs mentioned will be supplied and fitted by the Shipbuilder.

STRINGERS. The projecting part of the stringer to be covered with $\frac{3}{4}$ inch hair felt, cased in with solid nosing. (Nosing to be bevelled on upper face).

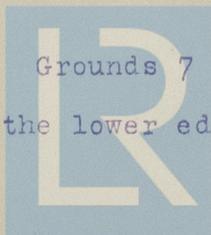
MEAT PORTS A heavy p.p. framed coaming to be securely fastened to frames of vessel of suitable depth to allow of a plug of similar construction to those described for manhole doors.

Chafing plates of $\frac{3}{16}$ inch galvanised steel to be fitted all round coaming and securely fastened with heavy brass screws.

Plug to be covered with fearnought, and retained in position with heavy galvanised iron bar of approved shape, bolted to centre of plug and secured at ends with thumb screws; plate sockets for thumb screws to be sunk flush and securely fastened into coamings.

BEAM KNEES On the outer edge of each beam knee a 7 inch by 2 inch ground, projecting $\frac{1}{2}$ inch beyond the face of the knee, is to be securely bolted by two $\frac{5}{8}$ inch bolts- two thicknesses of lining, $\frac{3}{4}$ inch and 1 inch respectively, are to be run on face of these, and the space behind filled with silicate.

LOWER HOLD BEAMS, STANCHIONS, &c. Grounds 7 inches by $2\frac{1}{2}$ inches, projecting $\frac{1}{2}$ inch below the lower edge of every beam, to be



secured to the beam by $\frac{3}{4}$ inch bolts spaced 3 feet apart.

Under the beams dry hair felt $\frac{1}{2}$ inch thick is to be placed, and one thickness each of $\frac{3}{4}$ inch and 1 inch matching nailed over all, and the space tightly packed with silicate.

All ventilator and ladderway openings to be framed out with p.p. coamings, $2\frac{1}{2}$ inches thick, and fitted with plugs and fastenings similar to those specified for mutton ports.

The tube pillars to be insulated with $\frac{3}{4}$ inch of hair felt, after which they are to be tightly served with 2 inch manilla rope, serving to be stopped at frequent intervals.

Hold stanchions and ladders to be tightly served with 2 inch manilla rope, stopped at frequent intervals.

Sides of girders to have grounds of suitable depth, bolted into position so as to give a minimum of 5 inches of silicate insulation, and $\frac{3}{4}$ inch hair felt on the bottom, all to be covered with two thicknesses of $\frac{3}{4}$ inch and 1 inch matchlining respectively.

TWEEN DECKS' BEAMS, STANCHIONS, &c. In between decks the grounds to project 1 inch below the beams, giving 1 inch of hair felt, with exception of under Brine Tank Room, and extending four feet further in each direction, where the grounds are to project 2 inches below the beams, giving 2 inches of hair felt.

All other details as specified for lower Holds.

RIBBON INSULATION. The underside of the upper and main decks in Nos. 3 and 6 holds and in the forepeak for one beam space to be treated similarly, as specified for the overheads in the adjacent insulated holds. That part of the Brine Tank Room floor which extends into the Main Engine Room

is to be insulated in a similar manner to that under the Provision Chambers.

BRACKETS. Brackets and gusset plates to be covered on each cheek with dry hair felt $\frac{1}{2}$ inch thick, and clad with wood through bolted, and the nosing treated as specified for the nosing of side stringers.

PIPES. Where pipes of any description pass through insulated compartments, suitable provision must be made for housing them, together with approved plug ports to get at them for examination and repair.

All brine leads, pumps, bilge suctions, sounding and air pipes &c. throughout the four compartments to be efficiently insulated with not less than 8 inch silicate, with grounds and linings to suit the position.

THERMOMETER TUBES AND SOUNDING TUBES. Where these pass through intermediate decks they are to be insulated to the Owners' satisfaction, and approved sparred continuations to be provided. Two thermometer tubes to be fitted into Meat room, and one thermometer tube to be fitted into vegetable room in approved positions by Insulation Contractor.

HATCHES. UPPER AND MAIN DECK HATCHES. The hatch coamings in the three compartments are to be lined with sawn pitch pine timber, bedded on thickly painted tarred felt, and bolted through the coamings by $\frac{3}{4}$ inch bolts sunk beneath the flush and neatly dowelled.

The sawn timber is to have a minimum thickness of 3 inches at the top, of approved depth, and increasing in thickness to give a bevel of 4 inches to the foot, the lower corners to be left rounded.

The underside of the hatch timber to be rabbetted out

at the inner edge to receive the lower line of matching in overhead insulation, and the bevelled sides clad with $\frac{3}{16}$ inch galvanised steel, bent to shape and secured with heavy brass screws.

Heavy galvanised wrought iron corner pieces to be fitted to the lower corners of all insulated hatch coamings. Where wooden coamings project more than 2 inches below the iron coamings, approved flat plate hangers are to be supplied and fitted by the Contractors.

Hatch beams to be fitted to correspond in every way with hatch coamings.

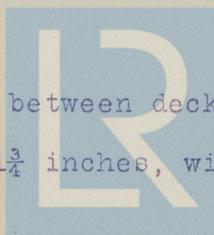
The insulated hatches to be built of sizes to Owners' approval, and to be constructed as follows:- Sides 2 inch pitch pine, top outer lining $1\frac{1}{4}$ inch, bottom outer lining 1 inch, inner linings of $\frac{3}{4}$ inch matching fitted with 3 inch by 6 inch stiffening grounds, one in centre and one in way of each ring bolt, each hatch to have 6 inches of washed cow hair firmly pressed inside.

Each hatch to have two $\frac{7}{8}$ inch galvanised iron ring bolts and nuts secured through stout plate washers with oval hole in top washer to permit ring to lie flat on the hatch.

All hatches to have distinguishing numbers and marks cut upon them, so that they may be easily identified, and they are each to receive two coats of paint; those in the No. 1 hold to be painted red, in No. 2 white, in No. 4 green, and in No. 5 yellow.

All coamings in way of ladders to have foot holes in accordance with and to meet the requirements of the Factory Acts.

MEAT BATTENS. On each side of the between decks and hold insulation, meat battens 2 inches by $1\frac{3}{4}$ inches, with the edges chamfered



and spaced 9 inches apart, are to be secured from the under side of deck to line of limber hatches.

BRINE SERVICE, &c. The delivery and return brine leads serving the compartments are to be insulated with a minimum of 8 inch silicate cotton, cased in with two thicknesses of 1 inch matching on grounds of approved size, all to be put together in sections corresponding with lengths of pipes. Sections at bulkheads, and in way of pipe joints to be fixed with brass screws.

The casing where passing through general cargo or bunker space to be covered on the outside with galvanised sheet iron, No. 16 B.W.G., carried to the deck and fitted dust tight, neatly secured with brass screws, sections to correspond with sections of wood linings.

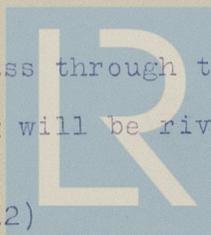
The brine pipes carried in the refrigerating engine room to be insulated in accordance with the engine makers drawings.

BRINE SERVICE PUMPS, &c. The brine pumps, brine return tanks, brine distributing boxes and service pipes, also brine mains to be insulated in accordance with details shown on engineers' drawing, and to the Owners' satisfaction.

The brine grids on the sides and bulkheads of all chambers, holds, between decks and tunnels to be substantially secured, this to be effected by wood chocks spaced to approval, secured with coach screws into grounds of insulation where practicable, and the heads of these again covered with hardwood stripes.

Brine pipes on tunnels in way of No. 4 & 5 hatches to be protected at the sides with close pitched heavy wood chocks.

Where brine pipes pass through the deck a 6 inch by 3 inch angle iron coaming will be rivetted and caulked



watertight by Builders, and the interstices between the brine pipes are to be securely filled in and grouted flush to the top of the angle bar with Wailles Dove's Bitumastic by Contractors.

REFRIGERATING ENGINE, EVAPORATOR AND BRINE TANK ROOMS. The floor, overhead and sides of the cold portions of the compartments to be insulated to a depth of 12 inches, in a manner similar to that heretofore described, or as shown on the Engineers drawings.

Partitions and doors to be fitted as shown on Engineers Plans with approved hinges and fasteners.

Plug doors to be fitted between engine and evaporator rooms with Taylor's galvanised hinges and fasteners of approved make, with approved lock, hasp and staple.

Approved racks to be fitted in brine tank room for carrying C.O.² gas cylinders. (See plan).

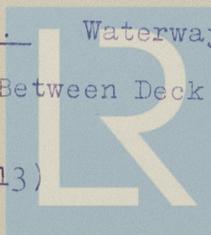
The floor of the evaporator room and 18 inches up the sides to be covered with ∇ lb. lead. Joints to be soldered and edges to be tacked down with copper tacks closely pitched. The lead to be bedded on a stiff coat of Stockholm Tar. Limber hatches to be fitted in Evaporator room similar to those specified for Holds.

The teak wood beds under the Evaporators to be covered with $\frac{1}{2}$ inch Bitumastic Cement, after the lead flashing has been fitted and the evaporators and connections are completed.

A portable floor of $1\frac{1}{2}$ inch matching on $1\frac{1}{2}$ inch bearers to be fitted in handy sections in Evaporator and Tank Rooms.

ARRANGEMENTS FOR CARRIAGE OF CHEESE.

Waterways are to be fitted all round each insulated Between Deck as shown on drawings.



These to be lined with 8 lb. lead extending over cant and 18" up the vessel's side. The lead to be bedded on thick paint, all joints to be soldered watertight, and the upper edges securely fastened with copper tacks spaced closely together.

The Sides and across one Bulkhead of each insulated Between Deck compartment are to be boarded with 1" match lining ledged together in sections not extending 5' in length. These to be secured in place at the top by heavy brass screws into horizontal grounds of suitable depth and thickness.

The grounds are to be faced with felt to make an air tight joint. The bottom to be similarly secured into the heavy pitch pine cant forming the side of the waterway.

Openings to be cut in boarding as shown on plan, or as approved.

Boarding to be fitted with meat battens similar to those specified for Holds.

Each section of boarding to have distinguishing marks cut in so that they may be taken down and replaced without difficulty.

Baffles inside of boarding to be fitted as shown.

A Baffling board is also to be fitted over each scupper.

Four Fan Rooms are to be built in the Shelter Deck in the position and of the details shown on the drawings.

The floor in the Fan Rooms to be covered with $\frac{1}{4}$ " Bitu-mastic Cement, after which grounds 3" x 3" are to be laid spaced 30" apart. These to be covered with two linings of 1" matching, and the space filled with silicate.

Insulated Plug Doors to be fitted as shown. These to be framed and fitted into solid pitch pine coamings. The

doors to have Taylor's Patent Hinges and Fasteners with secure hasp, staple, and stay hook.

Four electric fans (which will be supplied by Owners) are to be securely bolted down in the positions as shown, and from these, interchangeable connecting trunks are to be fitted through the openings into the compartments below, as shown on accompanying blue print.

SHIP'S PROVISION CHAMBERS. In addition to the spaces previously specified a ship's provision chamber and vegetable rooms &c. situated in the bridge space are to be insulated.

The bottom of the compartment as left by the Ship-builder to be covered with Bitumastic Cement $\frac{1}{4}$ " thick.

A Floor to be laid of $\frac{3}{4}$ inch and $1\frac{1}{2}$ inch Matchlinings on bearers 3 inches wide by 2 inches thick spaced 18 inch centres, the space between to be filled with silicate.

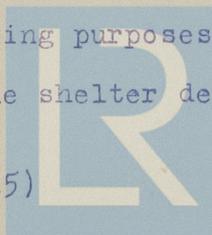
The Floor to be covered all over and 18 inches up the sides of all compartments with 8 lb. lead bedded on Stockholm tar, all joints carefully soldered and fastened with copper tacks close up along the upper edges of the flashing.

The sides to have grounds 3 inches by 12 inches set up on edge to the under side of the deck overhead, and to be covered with two thicknesses of lining $\frac{3}{4}$ inch and 1 inch thick, and the space closely packed with silicate.

The overhead to have grounds of suitable depth bolted to the beams, the lower edges to project 12 inches below the deck plate, and faced with two thicknesses of $\frac{3}{4}$ and 1 inch, the space filled with silicate.

The Floor to be covered with $1\frac{1}{2}$ inch tongued and grooved matching, on $1\frac{1}{2}$ inch bearers, in handy sections for lifting out and cleaning purposes.

The under side of the shelter deck in way of the meat



chambers, etc., but extending at least 4 feet more in each direction than the compartments above, to be treated similar to the overheading above mentioned, and to be covered with galvanised sheet iron of 16 B.W.G., secured with brass button headed screws.

Hinged plug doors to be fitted for access to the chambers as shown on drawing. All insulated doors to be fitted with Taylor's galvanised iron hinges and door fasteners, with approved hasps and staples for locking purposes.

Galvanised iron racks, shelves, and meat hooks in both rooms to be provided, and to be to Owners usual pattern.

The bulkhead dividing the vegetable from the meat room to be framed up with 6 inch by 2 inch grounds, spaced two feet apart, and faced on both sides with two thicknesses of $\frac{3}{4}$ and 1 inch matching, the intervening space filled with silicate.

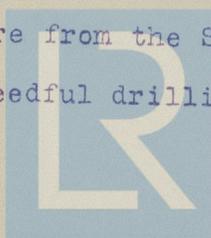
PAINTING. The underside of insulation in way of limbers, &c. to have three coats of approved paint.

VARNISHING. All woodwork except floors to receive three coats of varnish. No size to be used.

WORKMANSHIP. All workmanship and material to be of the best, and to the approval of the representatives of the Owners and Lloyd's Registry Surveyors.

JOINTS of all woodwork throughout to be properly shifted or broken both at seams and at butts. All butts to meet on or over grounds.

PLANS AND SPECIFICATION. Plans showing the compartments to be insulated accompany this specification, and sizes and particulars given therein are from the Shipbuilder, who, by his contract, will do the needful drilling and punching



holes for grounds or hangers, and fit and fix the needful palm bolts, together with such cutting of decks and bulkheads as may be needful, and will supply and fix the angle lugs on the bulkheads for securing the deal stiffeners.

It is further to be understood that the particulars contained in this specification and on the drawings are only a summary of the work, and do not cover every detail.

STAGING. The Contractor is to leave his staging up free of charge, for the use of the engineers in fixing their brine grids, and afterwards to remove same.

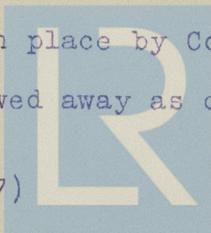
INSURANCE. The work and the material to be at the Contractor's risk until completion of trial trip and/or acceptance of delivery of the Steamer by Owners.

This contract like all contracts (written or verbal) this Company enter into for work and labour upon or in connection with their vessels, is subject to the condition that the Contractor assumes liability without recourse over against them for all risks of injuries, fatal or otherwise, to his servants, or to third parties, however, and by whomsoever caused.

IRONWORK. All ironwork in any way used in the carrying out of this contract to be galvanised.

CLEARING HOLDS. During the carrying out of this contract, all rubbish, dirt, &c. &c. is to be kept cleared away at least once a week, and all taken ashore, and on completion of the work, holds are to be swept out clean, the limbers cleaned out, and all decks cleared.

Hatches to be put in place by Contractors for machine trial and afterwards stowed away as directed.



LADDERS. Contractor to find and supply proper hold ladders for carrying out his work, and during rain or wet weather to cover all openings with tarpaulins or cargo tents in order to keep the work dry.

All silicate and timber to be kept under cover and not exposed to the weather.

PLUG DOORS. The sills of all plug doors to be clad with 3/16 inch galvanised steel plate, secured by brass screws.

VENTILATING DUCTS. These to be fitted as shown on plan, suitably insulated, with the necessary plugs similar in every detail to those fitted in Meat ports, and secured in place with similar arrangement.

THERMOMETERS. A pine wood box with lock and key, fitted to contain eight dozen thermometers, to be supplied by Contractors.

SCUPPERS. Care to be taken that the insulation is neatly fitted in way of all scuppers, so that they are left accessible.

PRESERVATIVE. All the wood used for grounds throughout the whole of the insulation, as well as the lower linings at the turn of the bilge, as high as the first stringer, is to be treated with the B.M. Zinc Chloride or Burnettizing Process.

The wood required is to be treated as soon as possible after acceptance of tender, and stacked under cover to dry.

No wood treated as above to be used which has not been stacked to dry for at least fourteen days.

TIME. Contractors are so to arrange their work with the Builders and suppliers of the refrigerating machinery that neither of these is hindered or prevented in any way from carrying out their respective contracts, and completing their respective portions of the work so that the vessel

is complete in respect of Refrigerating appliances by the time the Builders' trial trip takes place.

GENERAL NOTES. Contractors to supply their own lights.

Contractors' men to work the same hours as the Builders, and to conform to the various works' rules and regulations.

Every facility to be given to the Owners' representatives to inspect materials and fittings prior to and during construction.

~~The tender must be understood to include the acceptance of all the terms stated throughout the specification.~~

No part or parts of the contract to be sub-let without the consent of the Owners in writing being first obtained.

Anything omitted necessary for the carrying of Refrigerated cargo in a first class manner, or to complete the work to the reasonable satisfaction of Lloyd's Surveyors or of the Owners representatives, to be added without extra cost by the Contractor and considered part of this specification.

Wherever anything mentioned herein is to be approved, the Owners approval is to be understood.

Should the details contained in the specification differ from those shown in the drawings, the Owners' Superintendent will decide which method or detail has to be adopted.

