DOMINION
FIRE PROOFING
COMPANY Limited

FIRE PROOF CONSTRUCTION IN
TERRA COTTA HOLLOW TILE
DOMINION
FIRE PROOFING COMPANY
LIMITED

CONTRACTORS
for the manufacture and
installation of

HOLLOW TERRA COTTA
TILE FIRE PROOFING FOR
ALL CLASSES OF BUILDINGS

Sales Department
Hollow Tile Building Blocks
for Exterior Walls, Interior Walls
Furring, Floor Systems, etc.

Office: Winnipeg, Man.
INTRODUCTORY

Investigate the possibilities of Hollow Tile when making preliminary building designs

The Dominion Fire Proofing Company, Limited, with its Factory located in Canada, and being promoted by local Capital and Interests is essentially a Canadian Venture.

In presenting this Catalog, it is our aim to place in the hands of all interested parties, Architects and Engineers particularly, information and data concerning the most modern and practical Fire Proofing methods.

It is impossible to comprise all features of this Type of Construction, though we endeavor to convey a comprehensive idea of Hollow Terra Cotta Tile and its uses as a Fire Protection, not only for the tall Steel Framed Office Building, but the smaller Warehouse, Apartment and Residence Buildings as well. In this connection our Engineers will gladly submit recommendations and designs where special treatment is necessary.

As the advantages of Hollow Tile Construction are many, it is advisable to thoroughly investigate its possibilities when making preliminary building designs, and we would appreciate any opportunity to furnish estimates, also structural data, as a working basis.
Building Construction Best Adapted to Physical Conditions in Canada

RAPIDITY OF CONSTRUCTION
Terra Cotta Hollow Tile recommends itself particularly on account of the rapidity with which it can be installed. False work for temporary support of Hollow Tile Arches remains in place only twenty-four hours, and after removal, other trades can follow immediately with their work, thus making a great saving in the time of total completion of the building. Furthermore, the floor is perfectly dry and no delays are caused by dripping of water or other unavoidable delays where Concrete is used.

WORKING SEASON SHORT
The above facts are of special value where actual working season is so short. Besides, Hollow Tile can be installed with absolute safety under extreme weather conditions, when concrete construction is impossible. Hollow Tile Fire Proofing can be carried on into the winter months, thereby enabling entire Building to be enclosed and consequently allowing Interior Finishing to be completed with resultant saving to the Contractor and Owners, through structure not laying idle until Spring.

LIGHTER DEAD LOADS
Tile Arches, as they weigh not to exceed 40 pounds per cubic foot, are the lightest Fireproof Construction, considering actual load carrying Value.

INSULATING VALUE
As the Tile Blocks comprise at least two or more air cells, they are practically proof against transmission of sound or temperature, even when extreme. When used for Roof Construction, a suspended ceiling is unnecessary.

ADAPTABLENESS TO ALTERATIONS
In case of unforeseen changes arising after Fire Proofing has been installed, any number of square feet of Arches can be removed without seriously impairing the strength, in contrast to great expense incurred in removing Concrete Slabs.

FIRE PROOFING QUALITIES
Being a Burned Clay Product, which has been subjected to extreme heat in the Kilns, Hollow Tile is logically a better Fire Protection than a material made from mixing of materials, each of which disintegrates when exposed to fire.
DOMINION FIRE PROOFING COMPANY, Limited

Typical Span Flat Arch; Note End Construction Shearback

Typical Girder Fireproofing

Spandrel Fireproofing at Elevator Shaft

Granite

Fireproofing Details
Winnipeg Electric Ry Building
HOLLOW TILE ARCH CONSTRUCTION

15"/16" Flat Arches

12"/13" Flat Arches

Special Stanchion for Smaller-Size Beams

9"/10" Flat Arches
### TABLE OF SAFE LOADS FOR FLAT ARCHES

**SAFETY FACTOR—4**

<table>
<thead>
<tr>
<th>ARCHES</th>
<th>7 inch Arch</th>
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In reckoning the carrying strength of flat arches, take into consideration only the live load, weight of plaster and finish, as the weight of the hollow tile has been deducted.

Specify Dominion Fire Proofing Company’s Product for Quality of Material and Efficiency of Workmanship
Hollow Tile Arch Construction

7" & 8" Flat Arches

6" Segmental Arch
1 Rise per Foot of Span

6" Segmental Arch
Designed for Heavy Loads.
<table>
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<th>Width of Span</th>
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The weights of hollow tile blocks are included in above safe loads.

Specify Dominion Fire Proofing Company's Product for Quality of Material and Efficiency of Workmanship
On page 10 we reproduce a photograph of the new Hudson's Bay Building, at Calgary, Alberta. This is the first Standard Steel Frame and Hollow Tile Fireproof Building to be erected in Calgary, and over 200 cars of our material were used in the Fire Proofing.

On this page are shown the Girder and Column Fire Proofing details, also a section through the Floor Arches. A flat ceiling throughout entire storey was desired and suspended ceilings were specified on all floors, so considerable saving in Dead Load and cost of installation was made by designing the Arches as detailed.
Girder Fire Proofing

All the main Girders throughout should be Fire Proofed independent of the Floor Arches; for in the accidental case during fire of a heavy weight striking any of the Arches with sufficient force to crush through same, the covering of Girders would remain intact and protect these important members.

On the following pages are shown standard methods of Girder, Spandrel and Truss Fire Proofing.

While the protection of Steel Spandrels is generally the same thickness, the treatment varies in different Buildings to correspond with kind and thickness of walls, and exterior Lintels, whether Terra Cotta, Cut Stone, Granite, Ornamental Iron Facia, or Face Brick, also detail of Supporting Steel.

Built up Plate Girders or Trusses should be practically and thoroughly protected as they usually carry the total load of the Structure and Contents directly above and extend over a wide Span beneath. The most modern method of Fire Proofing these shapes is detailed on Page 15.

It is customary practice to conceal Steel Trusses from below with a suspended Ceiling, and as a solid Tile wall carried on each side of Bottom Chord and completely encasing the Truss, would bring considerable additional and unnecessary load to bear, it is advisable to Fire Proof the Individual Steel Members. This can be most economically and efficiently done with Hollow Tile as detailed.
GIRDER COVERING

Single Girder

Double Girder

Tops of Girders above Floor Beams

Girders & Beams Plaster on Bottom

Protection for Top of I

Covering All Around

Girder with Flitch Springing from one Side
HEAVY TRUSS GIRDER FIRE PROOFING

Double Plate Girder

Single Plate Girder

Top Chord

Bottom Chord

Diagonal Members

Fire Proofing for Individual Truss Members
Civic Building, Edmonton

Alberta

The New Civic Building, shown on the opposite page, is the first Standard Steel and Hollow Tile Fire Proof Structure to be erected in the City of Edmonton, Alberta, and was Fire Proofed throughout by The Dominion Fire Proofing Company Limited. This Building was originally designed for Reinforced Concrete Floors, but Hollow Tile Arches proved more economical, not only in actual cost, but made a saving of several months in time of completion of the Structure. Work of installation was carried on during the months of December and January, under extreme weather conditions, when concrete construction would have proven unsafe, thereby allowing the Building to be enclosed and Interior Finishing completed during the Winter.

Over sixty carloads of Fire Proofing were used in the Floor and Roof construction, in addition to the fact that all Partitions, Column, 'Lining and Backing of Brick Walls was performed with Hollow Tile.
Bay Window Construction

Section thru Top of Bay.
Bay Window Construction

Floor Line

2" Solid Exterior

L3" Book Tile or 75

Ornamental TerraCotta

Section thru Bottom of Bay
Column Fire Proofing

Illustrated page 23

As the total Live and Dead Loads throughout the entire Building are carried by the Steel Columns, they are essentially the most vital members of the Structure and should receive special consideration, and be effectively protected from Fire, for if exposed to extreme heat, they would warp and cause total collapse of the Building.

Hollow Tile is particularly adaptable as a Fire Protection in this connection, as any desirable thickness of covering can be provided and in addition Architectural features can be readily carried out without any expense for Special False Work.

On the following page we show various details of Column Covering, but in no case should Plumbing Pipes, Steam Risers or Electrical Conduits be concealed within the Column Fire Proofing proper. They should be boxed in with separate enclosure, thus avoiding any possibility of exposing the Structural Steel.

COLUMN FIRE PROOFING.

HOLLOW TILE METHOD.
DOMINION FIRE PROOFING COMPANY, Limited

**Column Fire Proofing**

- **Round Corners**: Made in 3" x 4" Tile
- **Square Corners showing Pipe Stack** Tile: Made any Thickness desired
- **Note on Angles for Guards**: Made 2" x 3" Tile
- **Round Columns**: Made 2" x 3" Tile
- **Double Corerings on Flat Heads of Columns**
- **Special Treatment of Column Corerings & Pipe Space**
- **Double Air Space Round Column Corering**
Canada Building
Saskatoon, Sask.

The Canada Building, erected in 1912, is the first Standard Steel Frame and Hollow Tile Fire Proof Building to be constructed in the City of Saskatoon, Sask., and was Fire Proofed throughout by this Company. Ten inch Flat Arches were installed in all Floors and Roof; the Interior Columns were Fire Proofed with a three inch Covering of Hollow Tile, and Hollow Tile of various thicknesses were used for all Partitions and Lining of outside walls.

On page 26 is reproduced a photograph taken in the above Building. The Floor Arches, Girder and Column Covering, also Tile Partitions and Furring are clearly shown.

Hollow Tile Exterior Walls, C.P.R. Shops, Calgary, Alta.
Hollow Tile Partitions

Too little attention is given to this important part of Building Construction, as there are numerous cases where every precaution has been taken to make the Structure Fire Proof throughout, except that an inferior material has been used for Interior Walls, usually on the theory that they are solely for the purpose of subdividing the rentable area.

Fire, at its origin in a Building, is local, and if confined by Fire Proof Barriers, could even be allowed to burn itself out without any appreciable damage except to inflammable contents. If confined only at Ceiling and Floor by a real Fire Proof material, it spreads throughout entire Storey and eventually by way of Well Holes and Shafts to entire Building, unless checked in time by outside agency. It is advisable to consider the dividing Partitions as a Fire Barrier and construct accordingly, using a material that is not only a "Fire Retardant," but "Fire Proof."

There are numerous so called "Incombustible" or "Fire Retardant" materials on the market, in some cases being lighter in Weight and Cheaper in cost of erection than Hollow Tile, but it is inconsistent policy, at the least, where the entire safety of a Building, its occupants and contents are jeopardized at a possible saving in "First Costs."

Hollow Tile Blocks are carried regularly in stock sizes of 12"x12" Face by either 2", 3", 4", 5", 6", 8", depending on thickness of wall desired, also either smooth faced or heavily scored, whether to receive plaster or to be left unfinished. In all cases the Blocks incorporate at least one air cell, and are not only advantageous as a Fire Protection, but on account of air space contained are practically proof against transmission of sound and extreme temperatures.

On another page are shown Cuts of Standard Partition Blocks that are carried in Stock. Special sizes can be Manufactured and we solicit any inquiry where other dimensioned Blocks are required.
Hollow Tile Partition Details

Stair Well Enclosure

Iron Stringers & Risers
Cement, Slate or Marble Treads

Up

Down

Cement, Marble or Tile Floor

Metal Frames & Wire Glass
Metal Doors

Elevator Enclosure & Electric Wire Shaft

Counter Wire

Shelf for Electric Cables & Wire

Tile & Wire Glass
Fire Proofing Details of Construction at Elevator & Stair Wells
Book Tile and its Uses

Illustrated following pages

Up to the date of issue of this Catalog, the actual use of Hollow Book Tile has been practically negligible in Western Canada, although there are many kinds of Construction where it can be used to economical advantage. It forms a light Fire Proof Roof, and incidentally furnishes insulation against the extreme temperatures experienced in this climate.

Not only in large Building Construction where Book Tile may be used for Bulk Heads, Elevator Pits, Hung Ceilings, Vault Decks, Main and Pent House Roofs, but also for Factories or Warehouses where there is practically no live load to be considered, aside from Wind and Snow loads, it is particularly advantageous. Many of the larger Manufacturing Companies in Cities where the use of Hollow Tile has been popular and extensive for years, specify throughout all their Buildings a “T” Iron and Book Tile Roof (with Composition Roof Finish) thereby securing an efficient Fire and Weather Protection at minimum cost.

On following pages we show various uses of Book Tile and refer particularly to Page 33 for Main Roof and Saw Tooth Skylight construction.
DOMINION FIRE PROOFING COMPANY, Limited

VAULT

Double 8" Tie Wall
2 Air Space

Sections thru Wall Furring

Section thru Vault Ceiling

Cement Top, Brick Tile, Fireproof

Marble Floor

Raised Floors to Conceal Plumbing Pipes in Toilet Rooms
McCallum, Hill Building
Regina, Sask.

The McCallum, Hill Building, shown on opposite page, was the first structure to be erected in the city of Regina of Standard Steel and Hollow Tile Construction. Over 80 car loads of our material were used in floor construction alone, and the rapidity with which the Fire Proofing was installed was particularly noteworthy, resulting in a considerable saving in time of completion of the Building.

Hollow Tile Exterior Walls, C.P.R. Shops, Calgary, Alta.
Suspended Ceiling

Wire Hangers

Special Book Tile for Fire Proofing T-irons.

Fire Proof Concrete Construction

Round Columns

Girder & Floor System

Square Columns
DOMINION FIRE PROOFING COMPANY, Limited

Sound Proof Test
Made at Steinway Hall, Chicago, Ill. Jan. 4-1895

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<tr>
<td>Iron Channels 16 Chrs</td>
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Temperature Test

Made by
Henry Laurens, Son
New York
April 13rd 1898

10" Tile Arch
500°
Less than 100°
1500°
Bottom 200°
DOMINION FIRE PROOFING COMPANY, Limited

Typical Floor Framing Plan

Page 40
Specifications for Fire Proofing

EXAMINATION OF DRAWINGS
The Contractor shall examine the general and steel drawings for the entire building, shall make such special shapes, and shall furnish such materials as are necessary to thoroughly and practically fireproof all structural steel throughout the building, excepting where other material is shown or specified.

SCAFFOLDING AND CENTERS
The Contractor shall provide all scaffolding and centers for the proper setting of his material, and shall have sufficient centers on the job so that arches will have proper time to set before the centers are removed.

MATERIAL
All material for Fire Proofing throughout the building to be equal to that manufactured by the Dominion Fire Proofing Company Limited.
Mortar for all fireproof partitions, furring, floors, column and girder covering, etc., is to be lime mortar, composed of best quality, fresh lime, well slaked, and clean, sharp sand in proportions to make an adhesive mortar, all strongly tempered with approved Portland cement just before using.

SPECIAL SHAPES
The Contractor shall furnish all necessary special shapes for the proper fitting to steel work, including fireproofing for beams and girders projecting below the ceiling line.

GIRDERS
All girders and beams which project below the ceiling, or in wellholes, shall be independently fireproofed. This fireproofing, as far as possible, shall consist of shoe tiles on exposed flanges of beams, with the necessary hollow tile fillers. Fireproofing shall be put on so that all joints will be flush and spaces filled up without any afterpointing.

FLOOR AND ROOF ARCHES
The Contractor shall furnish flat arches from the first floor to the roof, inclusive. Floor and roof arches shall be....... inches in all cases and shall be constructed as per detail. All arches shall be strong enough to safely support........ pounds per square foot, uniformly distributed.
In laying tile arches, key tiles shall be forced into place, in such a manner that there will be uniform bearing over the entire surfaces of both sides of the tile.
LINTELS
The Contractor shall furnish and set all fireproofing around lintels, as indicated and required.

PARTITIONS
All partitions (excepting such as are indicated to be laid with brick) shall be furnished by the Contractor.

Unless otherwise shown, the following sizes are to govern:
3" Tile where Story height does not exceed 12 feet.
Partitions 12 feet and up to 14 feet in height to be 4 inches.
Above 14 feet 6" Tile is to be used.
Also all Corridors, Continuous Shaft Enclosures and all Basement and First Story Partitions to be built of 4" Tile.
Partitions shall start in all cases from the floor arch and extend to soffit of arches in floor above.
All partitions shall be laid up with solid joints and special care shall be taken in framing around openings.

FURRING TILE
The Contractor shall construct recesses, pilasters and other features wherever shown on the plans, also enclosures for plumbing pipes, stacks, electric wires, etc., wherever called for on drawings.

In general, the Contractor shall use 3" tile for this work.
Exterior walls throughout the building are to be furred with 2" split tile furring.

COLUMNS
Interior columns throughout, also portion of exterior columns that project inside of masonry walls, are to be encased with single thickness of 3 inch hollow tile, same to be built true and plumb with square corners.

DETAILS
The Contractor shall furnish large scale details for all special shapes, lintel and girder covering, and general type of arches, which shall be submitted to the Architects, in duplicate, for their approval. A duplicate of the approved sheet shall be left in the office of the Architects.

RUBBISH
The Contractor shall remove all his rubbish as fast as it accumulates, and leave the premises, at completion, in perfect condition, so far as his work is concerned.

PATCHING
Any patching of fireproofing that has been damaged by other trades, is to be paid for as an extra, on written orders, approved by the Architect.
DOMINION FIRE PROOFING COMPANY, Limited

Exterior Walls, throughout C.P.R. Shops, Calgary, Alta., constructed of Hollow Terra Cotta Tile
Note Plaster applied directly on same.
Combination Tile and Concrete

The so called "Combination System," that is, Reinforced Concrete Joists with Hollow Tile Filler, has proven an economical floor construction where a complete Steel Frame Structure is out of the question. Occasionally it has happened that the supply of Steel from the Mills has been inadequate to supply the immediate demands of Western Canada with its rapid development, and a Fire Proof Floor System is necessary that can be installed with a minimum amount of Iron supports. In this case we recommend a "Combination System" Floor as illustrated on Pages 45 to 48 and designed according to Tables given for various widths of Span.

This type of Construction is particularly adapted to Apartment Houses, Residence, and Public Building Construction, where the distance between supporting walls is not prohibitive. Also the use of Hollow Tile Blocks for Exterior and Interior carrying walls is economically practical.

Apartment Buildings have been erected to a height of four complete Stories, with our Hollow Tile Blocks used as carrying walls, which is good evidence of quality and strength of our material. No reinforcement whatever was used in the walls. Combination Floors were installed throughout these Buildings, and the fact that Hollow Tile Blocks were used in Floors and Walls, made the Dead Loads lighter than would have been the case with any other Fire Proof Material, and as a result appreciably reduced the total weight on the Foundations.

On Page No. 48 we reproduce an actual Photograph taken in the Basement of the Apartment Building referred to, showing clearly the underside of "Combination System" Floor, also the Exterior and Interior Tile Walls with Floors bearing directly on same.

This Construction especially commends itself to Residence Construction, being Fire, Sound, and Vermin Proof. Furthermore, with Hollow Tile used for Outside walls, the temperature within can be maintained more uniform the year round, and correspondingly cooler in Summer and Warmer in Winter.

Our Construction Department is at your service for any recommendations or Estimates regarding above mentioned Fire Proofing methods.

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TABLE OF SAFE LOADS FOR COMBINATION SYSTEM FLOOR.

Safety Factor—4

<table>
<thead>
<tr>
<th>Width of Span</th>
<th>12 inch Tile</th>
<th>10 inch Tile</th>
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<th>8 inch Tile</th>
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DOMINION FIRE PROOFING COMPANY, Limited

For Load Table see page 44
Detail of Floor and Roof Construction

Fire Proof Construction Details
As Used In
Canada Life Assurance Buildings
at
Calgary, Alta. and Regina, Sask.
Brown and Vallance, Archts.
Combination

Tile and Concrete Joists

With Full Tile Surface to Receive Plaster and 2 inch Concrete Fill
Concrete Mix:—1 Part Portland Cement
3 Parts Sand
5 Parts Gravel or Stone

TABLE SAFE LIVE LOADS IN POUNDS PER SQUARE FOOT.

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<tr>
<th>Span in Feet</th>
<th>12 inch Tile</th>
<th>10 inch Tile</th>
<th>9 inch Tile</th>
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LONGSPAN CONSTRUCTION

Photograph of Combination System Floor, and Hollow Tile carrying Wall,
Apartment Building, Hugo Street, Winnipeg