

**NYU LANGONE HEALTH**  
**FACILITIES OPERATIONS/REAL ESTATE**  
**PREVENTIVE MAINTENANCE AND INSPECTION PROGRAM POLICY # T.01**

**PENETRATIONS IN SMOKE/FIRE WALLS/SLABS AND REPAIR**  
**FIREPROOFING OF STRUCTURAL STEEL**

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**INTRODUCTION**

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Maintaining the integrity of structural steel, firewalls and smoke barriers throughout the medical center is a major component of the facility's fire protection plan. If smoke and fire barriers are not maintained in accordance with the original fire rating, the level of protection provided to patients, staff and visitors could be severely compromised.

Any contractor or in-house department performing work at NYU Hospital Center and NYU School of (collectively referred to as NYU Langone Health or NYULH) which causes a penetration through a fire or smoke barrier (including floors, ceiling and walls) is responsible for correctly sealing these penetrations as outlined below.

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**PURPOSE**

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To document any fireproofing issues for structural steel and the penetrations of rated fire/smoke walls and floor slabs (hereafter referred to as "rated walls/slabs") within NYULH space and provide a quality assurance process to insure that as infrastructure is installed, the rated walls/slab penetrations are properly sealed; and to outline the preventive maintenance and inspection (PMI) procedures for identifying and repairing such penetrations.

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**POLICY**

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All penetrations of rated walls/slabs, whether existing or newly created by construction, shall be properly sealed to protect against the passage of fire and smoke. All structural steel is to be appropriately fireproofed. All in-house maintenance staff and external contractors working in NYULH spaces and penetrating fire rated walls/slabs, must obtain certification and permission from a central authority (Facilities Operations or MCIT) prior to performing work. Certification will include a short training session to verify that the contractor is knowledgeable about the building codes for firewall penetrations and the appropriate seals and techniques used for the repairs/restoration of said penetrations. The Environmental Health and Safety and Facilities Operations staff shall perform periodic audits of all wall/slab penetrations to insure that they conform to these requirement. Any contractors failing to conform to the policy set forth will not permitted to work at NYULH.

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## SCOPE

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This policy applies to all exposed structural steel penetrations, new or existing, used or not used, created by but not limited to utilities, conduits, duct work, pipe and cabling (telephone, data network, fiber-optics, security devices, motion detectors, surveillance cameras, card swipes, biomedical devices, nurse call, fire alarms, overhead page, audio visual equipment, telecom carriers, wireless and microwave communications, cable TV, developmental wiring, etc.) in any NYULH space.

Penetrations created but not used, must be returned to the original rating of the penetrated wall/slab. All penetration repairs must adhere to a specific underwriters Laboratories (UL) system. UL system methods of procedures and products are contained in the Hilti Systems Firestop Specifications Guide.

The most recent set of fire/smoke partition drawings for all NYULH areas shall be used. These are available in the various Facilities Operations and Real Estate Departments (Superblock, LOH, LHB, Long Island and Real Estate compliance offices).

In the absence of adequate drawings, the Environmental Health and Safety specialist, Fire Life Safety Director, architect or Life Safety Consultants shall be consultant to determine the rating for wall/slabs.

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## DEFINITIONS

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“Contractor” shall be defined as any company, person or internal NYULH department that engages in work requiring penetrations of rated walls/slabs.

“Penetration” shall be defined as any compromise of a wall or floor slab’s integrity and/or continuity. This breach of integrity and/or continuity may be the result of a hole or opening made in the wall or slab to permit the installation of utilities or data services (as described above) or the disruption of an existing fire rated patch of a previous penetration due to contractor work on the same wall or slab.

“Fire Barrier” shall be defined as any wall, floor, ceiling or roof which has a fire resistance rating.

“Smoke Barrier” shall be defined as a barrier, which divides a floor into smoke compartments and has a minimum fire resistance rating of ½ hour. In newly constructed or renovated areas, the smoke barrier must have a fire resistance rating of one hour.

“Smoke Partition” shall be defined as any construction designed to prevent passage of smoke and gases; not required to be fire rated.

“Facilities Operations/Real Estate” are the departments responsible for the maintenance and operation of the superblock campus, Langone Orthopedic Hospital (LOH), Langone Hospital Brooklyn (LHB), NYU Long Island and all real estate buildings



“Fire stopping” shall be defined as any component or product installed to maintain or regain the fire resistance rating of a fire barrier that has openings that could allow fire or smoke to pass to any other part of the building. All fire stopping systems must be tested and listed by an accredited third party testing agency for their appropriate use. As of 11/1/21, only Hilti Firestop products are approved at NYULH.

“Exposed Structural Steel” shall be defined as steel in visible areas which must be fireproofed and are utilized for building support.

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## **QUALITY ASSURANCE**

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This program and all documentation shall be reviewed at least periodically by the Director of Engineering. Penetration survey documentation shall be presented to the Environment of Care Committee quarterly via the Life Safety Dashboard.

The specific hospital (senior) director of engineering and Real Estate compliance office is responsible for the implementation of the program on a day-to-day basis.

An external life safety engineer (such as HPE, Inc or similar firm) or architect will survey the wall, floors and ceiling for penetrations annually in hospital areas. The Facilities Operations Departments and Real Estate Compliance Office shall maintain a plan for improvement and documented efforts to comply with the plan.

The PMI procedures are based on NYC fire safety code as well as internal NYULH safety guidelines for smoke and fire barrier integrity.

All staff shall be familiar with and work in accordance with the established NYULH Infection Control Procedures. Infection Control and Risk assessment (ICRA) protocols shall be followed.

Outside contractors may be used to supplement in-house staff for remediation and identification. The outside contractors shall comply with all infection control guidelines as well as all construction standards.

Construction Projects: Project managers are responsible for reporting on any new construction projects at the weekly construction coordination meeting. In addition, the project managers shall conduct daily inspection during the project duration.

The Environmental Health and Safety (EHS) Department conduct semi-annual QA inspections of smoke and fire barrier doors and annual inspections of IT and Electrical Closets.

Any deficiencies found for improper sealing of penetrations are communicated to the project manager immediately. Project managers are responsible to ensure corrections are made in a timely fashion (generally within one week of when work is completed in that area). Penetrations caused by work-in-progress shall be temporarily sealed at the end of each work day with removal intumescent materials or equivalent.

Since contract language requires contractors to properly seal all penetrations, a failure to do so may result in withholding and/or reducing payment until such work is completed. Should the respective contractor fail to complete the work, the withheld monies may be used to cover the expenses of hiring another contractor/vendor to rectify the work.

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## **ENGINEERING INFORMATION**

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All building construction data and specifications are contained in the Buildflow drawing database and accessible to Real Estate Development + Facilities (RED+F) staff. Basic Building Information are contained in the electronic Statement of Conditions section accessible via The Joint Commission's intranet system ([www.jointcommission.org](http://www.jointcommission.org)).

### **STANDARD RATINGS:**

Construction drawings given to the contractor and available to in-house department should be indicate any rated smoke and fire walls. The following general rules apply:

- Stairwells, pipe shaft and elevator shaft must always maintain a two hour fire rating.
- Mechanical rooms and laboratories must maintain at least a one hour fire rating.
- Any smoke barriers used to divide floors into smoke compartments must maintain at least one half hour fire rating. Smoke barriers in newly constructed or renovated areas must maintain at least one hour fire rating
- Exit corridors, in general, must be smoke partitions, that is form a barrier to limit the spread of smoke.
- Structural steel must have fireproofing as required by the NYC Department of Building.

### **MATERIALS:**

Fire stopping: Contractor must provide and use Hilti penetration seal assemblies whose fire resistance rating have been determined by testing (ASTM E-814) in the configuration required and which have fire-resistance rating at least as high as that of the fire-rated assembly in which they are to be installed. These materials must be Hilti Certified Products.

Smoke Stopping: Use any caulking-gun type or poured joint sealant suitable for the application; use only fully curing types where accessible in the finished work. For smoke partitions, rated fire stop material is not required for sealing of penetrations.

In all cases, provide intumescent products which allow normal expansion and contraction movement of the penetrating item without failure of the penetration seal and emit no hazardous, combustible, or irritating by-products during installation or curing period. Defined UL systems must be utilized. High traffic opening shall be fire-stopped with UL rated systems specially designed for retrofit, such as speed sleeves, discs, calmshells, intumescent fire stop putty or pillows. Typical high-traffic opening include: cable tray penetrations of walls and floor, opening for voice, data and communications cabling, all sleeved cabling opening.

When a penetration in a smoke or fire barrier is made in error or is too large to be sealed using fire stop material. It should be repaired using the original materials of construction. **Scab patches are**



**expressly prohibited (scab patches are sheetrock or other material covering a penetration without regard to original construction).**

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## **SCHEDULE**

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- Annually: Survey, identify and document all penetration deficiencies. This information and subsequent repairs shall be retained by Facilities Operations or Real Estate Departments.

Work shall be performed as follows:

- Staff painter mechanic and/or outside life safety consultants/technicians shall survey and log all penetrations in fire and smoke barriers as well as exposed structural steel deficiencies.
- Annually: EHS QA inspecting of electrical and IT closets.
- All construction project managers shall inspect construction areas daily while construction is in progress, fire stopping and smoke stopping shall be performed as soon as possible upon completion of the work. Temporary means of fire/smoke stopping shall be employed for work in progress at the end of each day.
- Auditing: EHS audits construction projects at random to determine adherence to daily construction inspections.

Rate Wall/Slab Penetration Permits: all work that is performed in NYULH buildings requires a wall/slab penetration permit via the ATG Permit System to be filled out, submitted and logged via the NYULH web-site, Facilities Operations and Real Estate Departments must be notified before ANY work commences. A work order will be created to seal all open penetration(s) found.

Deficiencies in penetration repair shall be noted and submitted to the contractor in the form of a punch list to be completed as work progresses.

- ISLM: Controlled inspections, where required, in construction projects, shall be placed in the project file. Corrective work shall be documented therein.
- Project Managers shall note in the daily construction safety inspection the presence of any penetrations not properly repaired and ensure that the general contractor, construction manager or Facilities/Real Estate staffs are aware of issue(s). The Project Manager shall follow-up to ensure work is completed.
- Projects performed by Non-Facilities Operations Departments: upon scheduling work by other departments (such as IT, Security, etc.), an ATG permit shall be submitted by the originating department.

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## **PROCEDURES**

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**Certification:** Contractors working in NYULH space must obtain a HILTI Certification for Fire stopping by attending a HILTI Penetration Training (or other authorized organization in the UL approved methods of installing fire stopping material). Such granted certification shall be submitted to the Project Manager, Facilities Operations/Real Estate Departments as well when applying for an ATG Penetration Permit. Training can be arranged through NYULH.

**Permits:** Contractors working in NYULH space must obtain an ATG Penetrations permit to install infrastructure as described in the “scope” section above. Permits via the ATG system located on the NYULH intranet web-site with the following information: company name, cabling location, building, floor and path of cable (from-to), number of cable runs, and names/phone numbers of project managers.

**Penetrations Permit.** The online ATG permit system requires authorized users to submit a permit. The submitted permit is then reviewed/issued within 2 business days (assuming certification requirements as described above have been met). All contractors are required to follow the terms of the Penetrations permit.

Permits will expire within thirty **(30) calendar days** or daily (depending upon work). The Permit may be renewed if the project extends beyond 30 days. All permits must have a drawing(s) indicating the location of work. Drawings can be obtained from the RED+F Space Planning Office.

**Above Ceiling Work Permit Vest** will be provided once a permit is obtained. This blue vest must be worn during the duration of the project and must be returned upon expiration of the Penetration Permit.

At the end of the work week permitted, the sponsor department (RED+F) will update the activities described on the permit to include any alterations in scheduled work or additional “small pulls or projects” that occurred.

**All construction projects:** Permits shall be issued as part of the Interim Life Safety Measures documentation (ILSM) and shall be valid for the length of the project. Final inspection and sign-off shall be performed at the project’s completion. Such a permit is good only for work within the project site. Any project related work that entails running cables, pipes, etc. outside the project site through other areas of the hospital shall be subject to the regular rules of this policy and procedure. Renewal of these permits at 30 day intervals for construction projects is required.

For every significant renovation or new construction project, the project manager must inform all potential contractors of their responsibility of bringing any exposed fire wall or smoke barrier into code compliance. Bidders should be given the opportunity during the walk-through to examine these areas so as to bid accordingly. For those projects where areas may not be visible until after demolition begins, the project manager should budget for penetrations beforehand, issue a change order to cover the additional work afterwards or, after discussions with the appropriate administration transfer responsibility of the repair to Facilities.

The contractor generally is responsible for repairing all penetrations in the demised project area. As such, the contractor has responsibility:

- For sealing and fire stopping with a UL rated system that penetration if it is of a similar size and scope to one that would have had to have been made to accommodate the penetrating item
- For sealing and fire stopping with a UL rated system that penetration if the proper sealing of all pre-existing penetration was included in the scope of work



- For reporting the penetration to the project manager if it is of a size and scope beyond the needs of the current job.
- Fireproofing exposed structural steel where needed.

During any major renovation project, all rated fire assemblies should be brought up to code. Reporting of penetrations for in-house repair should be confined to those found during small scale wiring projects.

### **Documentation:**

**Life Safety Deficiency List:** exposed structural steel fireproofing deficiencies and penetrations shall be entered into the “Life Safety Deficiency List” maintained by Facilities Operations/Real Estate. All documentation shall be include in the computerized maintenance management system (AwareManager or the system used).

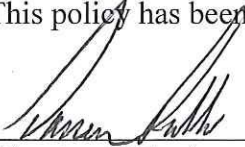
**Interim Life Safety Measure (ILSM)** – ILSM risk analyses and plans (if warranted) shall be prepared for every penetrating and fire proofing deficiency.

### **POST-INSTALLATION CONSTRUCTION:**

- a) All fireproofing and penetration repairs must be validated with TR-1 certification by a professional engineer or architect.
- b) When installation is complete and rated wall/slab penetrations are sealed and structural steel is fireproofed, the contractor shall notify the sponsor department (i.e.: Facilities or IT). Any deviation from the original path will be noted on the Permit Form as an “update” along with any other additions or alternations as described in the Procedures: Permit section above.
- c) A representative from the NYULH Facilities Operations/Real Estate staff will inspect all rated wall/slab penetrations for completed fire stopping. The contractor will provide a representative to accompany the representative to familiarize then with the work to be inspected, and shall act as a guide to expedite the inspection.
- d) The Facilities Operations representative performing the inspection shall acknowledge by electronically “signing-off” of the Penetrations Permit within the ATG system when it is verified that all penetrations have been properly sealed.
- e) All contractors are required to follow the terms on the Rated Wall/Slab Penetrations Permit. Such agreement is made by the Contractor (or representative) listed on the permit at time of issue.
- f) Final payment shall be authorized to a contractor only when the NYULH Facilities Operations staff/Real Estate representative validates all penetrations have been properly sealed, or other arrangements have been made to fire stop the penetrations.



This policy has been reviewed and approved by:

  
\_\_\_\_\_  
Director of Engineering

2/23/22  
\_\_\_\_\_  
Date

ATTACHMENTS:

- Typical Rated Wall/Slab Penetrations Permit
- Permit Request Log/Sign-in Sheet
- Typical Fire/Smoke Barrier Drawing

Issued date: 6/1/07

Revised: 11/1/08

Revised: 8/1/09

Revised: 10/30/09

Revised: 5/15/15

Revised: 02/01/22





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## Above Ceiling and Barrier Integrity

Permit Status

Start/End Date: 11/19/2021 - 11/20/2021

Project Name: Project Name

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PIM Number: Project Reference Number

Requested: 11/19/2021 - Name of Requestor

Contractor/Worker Name: Contractor and Company

Authorized Hospital Project Owner: Owner Name and Address

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Briefly describe overall nature of the project. NOTE: For Hospital Brooklyn maximum 1 week duration allowed for Above Ceiling permits. For Main Campus Above Ceiling permit can have 30 day duration.: Project Description

### PERMIT INFORMATION

Provide additional information specific to Above Ceiling Work NOTE: Quality control specialist will survey the wall, floors, and ceiling for penetrations, open junction boxes and insure sprinkler pipes are not supporting any other items in hospital areas: Above Ceiling and Barrier Integrity Work Permit

#### Part I - Nature Of The Work

Work Involves Disturbance Of Ceiling Tile(s)

Work Will Cause Penetration Through Wall(s)

Work Will Cause Penetration Through Hard Ceiling(s)

Work Will Cause Penetration Through Floor Slab(s)

Work Will Cause Disturbance of Damper(s)

Work Entails Installing Electrical And/Or Mechanical Device(s) Above Ceiling

#### Part II - Risk Assessment

More Than 1 Ceiling Tile Will Be Disturbed At Any One Given Time

Affected Wall(s) Are Fire And/Or Smoke Barriers

Affected Damper(s) Are An Integral Part Of A Fire And/Or Smoke Barrier Assembly

Presence Of Electrical And/Or Mechanical Services In Work Area



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## Above Ceiling and Barrier Integrity

Permit Status

Start/End Date: 11/19/2021 - 11/20/2021

Project Name: Project Name

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PIM Number: Project Reference Number

Requested: 11/19/2021 - Name of Requestor

Contractor/Worker Name: Contractor and Company

Authorized Hospital Project Owner: Owner Name and Address

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Briefly describe overall nature of the project. NOTE: For Hospital Brooklyn maximum 1 week duration allowed for Above Ceiling permits. For Main Campus Above Ceiling permit can have 30 day duration.: Project Description

(Cont. 2)

Presence Of Electrical And/Or Mechanical Services In Work Area

Connection To Be Made To Existing Electrical And/Or Mechanical Service In Work Area

### Part III - Risk Mitigation Requirements

An Infection Control Permit Must Be Issued In Conjunction With This Permit

An Interim Life Safety Measure Permit Must Be Issued In Conjunction With This Permit

An Approved Containment Device Shall Be Utilized To Reduce The Spread Of Dust

Penetrations Through Rated Barriers Must Be Patched And Sealed In Accordance With Approved Assembly Requirements

Penetrations Through Floor Slabs Must Be Patched And Sealed In Accordance With Approved Assembly Requirements

Hard Ceiling Areas Must Be Patched And Sealed In Accordance With Approved Assembly Requirements

Affected Fire And/Or Smoke Dampers Must Be Tested And Proven Operational

Contractor Must Comply With Hospital Policies And Procedures For Lockout And Tagout Of Electrical And/Or Mechanical Services In The Work Area

Contractor Must Apply Labels To Walls, Utilities, Equipment, Etc. In Accordance With Hospital Policies And Procedures





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## Above Ceiling and Barrier Integrity

Permit Status

**Start/End Date:** 11/19/2021 - 11/20/2021

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**Requested:** 11/19/2021 - Name of Requestor

**Contractor/Worker Name:** Contractor and Company

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**Project Name:** Project Name

**PIM Number:** Project Reference Number

**Authorized Hospital Project Owner:** Owner Name and Address

**Briefly describe overall nature of the project. NOTE: For Hospital Brooklyn maximum 1 week duration allowed for Above Ceiling permits. For Main Campus Above Ceiling permit can have 30 day duration.:** Project Description

(Cont.3)

All Personnel Performing Above Ceiling/Penetration Work Must Wear a Blue Vest

Permit Request Query - All Active Permit Requests: Filtered With All Sites AND Start Date >=02/01/2022 AND End Date <=02/22/2022 AND Permit Type=Above Ceiling 2/22/2022

Permit Number	Request Date	Start Date	End Date	Business Unit	Contractor/Trade Name	Contractor/Trade Name	Site	Building	Class	Room Location	Current Function
3157	02/17/2022	02/22/2022	02/25/2022	MASON	Alin Aysh	Elyse Greenberg	NYU Langone Hosp	NYU Langone Hospital Brooklyn	04	OR suite	Above Ceiling and Barrier Hoist (enterprise wide)
3156	02/16/2022	02/16/2022	02/20/2022	LF Direct Healthcare	Richard Johnson	Uvasha Kison	NYU Langone Hosp	NYU Langone Hospital Brooklyn	04	Screened entrance, LB 4175	Above Ceiling and Barrier Hoist (enterprise wide)
3155	02/16/2022	02/16/2022	02/25/2022	INTERCALL	INTERCALL CONTRACTOR	David Mamm	Orlando	6745 Coquina Blvd Fargo Park	01	New IV area	Above Ceiling and Barrier Hoist (enterprise wide)
3154	02/16/2022	02/16/2022	02/25/2022	Metropolitan Pro-Net Security Systems, Inc	James Khoury	Muzaf Hammad	NYU Langone Hosp	NYU Langone Hospital Brooklyn	01	Room 1D BDF, 1D BDF, 1D BDF, 1D BDF, Lower and Main Lobby, Cite Available, Rooms 024 and 22	Above Ceiling and Barrier Hoist (enterprise wide)
3162	02/16/2022	02/16/2022	03/04/2022	MASON	Alin Aysh	Robin Samuel	Orlando	450 E 29 St New York	09	Room 2 B5-C and the surrounding rooms and hallway	Above Ceiling and Barrier Hoist (enterprise wide)
3161	02/16/2022	02/22/2022	03/01/2022	STARCON	STARCON CONTRACTOR	Thomas Napolitano	WUH	Hoag Pavilion	MP 2nd FL	Hoag 2 B5-C and the surrounding rooms and hallway	Above Ceiling and Barrier Hoist (enterprise wide)
3160	02/16/2022	02/22/2022	03/01/2022	MASON	Alin Aysh	Thomas Napolitano	WUH	Gardner Pavilion	GP 2nd and 3rd fl	LL B5-C and surrounding areas	Above Ceiling and Barrier Hoist (enterprise wide)
3160	02/16/2022	02/22/2022	03/01/2022	MASON	Alin Aysh	Thomas Napolitano	WUH	Main Pavilion	MP Basement	MBL315 and the surrounding areas	Above Ceiling and Barrier Hoist (enterprise wide)





