



Kenton County Fire Training Center

LIVE FIRE TRAINING FACILITY

Standard Operating Procedure



PURPOSE

The purpose of this procedure is to establish standard guidelines for conducting on-site training fires in the Kenton County Fire Training Center burn building. This SOP is not intended to take the place of NFPA 1403. Users are expected to follow the most current release of NFPA 1403 during each use and refer to it first for guidance.

GENERAL USAGE

- **Permissions and Scheduling:** Any fire department member or outside agency wishing to use the burn building must first obtain permission from the Kenton County Fire Chiefs Association. The time and date of the training must be scheduled with a representative of the Kenton County Fire Training Committee. Drills involving Kenton County fire recruit and departmental training always have first priority. At the discretion of the KCFCA a usage fee may be charged to outside services/agencies.
- **Damage, Repairs and Modification:** If any agency (member or not) uses the facility and causes damage or fails to properly clean up after each use, that agency shall be responsible for payment of said damages and/or clean up. Any and all repairs, changes, modifications, clean up etc. shall be coordinated and scheduled by KCFCA.
- **Weather:** The training session shall be curtailed, postponed, or canceled, as necessary, to reduce the risk of injury or illness caused by extreme weather conditions.
- An Inspection from a qualified engineer shall occur every five years. The training committee chair person shall coordinate the inspection.

A representative of the K.C. Fire Training Committee must be on-site for any live fire drills involving the burn building.

The burn building has been designed specifically for the purpose of repeated live fire training evolutions and includes safeguards that can become unacceptably hazardous through misuse and neglect. All agencies must comply with this document, in addition to NFPA 1403.

COMMAND / INSTRUCTOR-IN-CHARGE

One officer on the scene shall be designated as "Command" and will assume the Command functions. A Command Post shall be established and positioned to afford maximum visibility of the structure, operating companies and fire conditions. The instructor in charge shall assign one instructor to each functional crew, each of which shall not exceed five students, one instructor to each backup line, one additional instructor for each additional functional assignment **Command will assume all responsibilities of the "Instructor-In-Charge" as referenced in NFPA 1403.**

COMMUNICATIONS

Command is responsible for establishing radio communications with each company officer or instructor involved in the drill. Channel assignment must be coordinated with all companies involved. Companies operating at the training fire will continuously monitor the assigned radio channel. A radio check will be conducted prior to initiating training fire operations.

FIREGROUND PERIMETER

To eliminate confusion, and provide adequate scene control, all personnel operating within the fireground perimeter shall operate under the direction of an assigned officer. The fireground perimeter shall be defined as the hazardous area surrounding the burn structure and shall be determined by Command or the Safety Officer. All spectators shall be restricted to an area outside the fireground perimeter.

RAPID INTERVENTION TEAM (RIC)

Provide a staffed, charged back-up line for the RIC position to assist in fire extinguishment and rescue of interior personnel. This position shall consist of a minimum of two **Instructors** competent with Northern KY RIC protocol



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SAFETY OFFICER

The Safety Officer will be assigned at all structural training fires. Responsibilities include monitoring personnel and fire conditions, working with Command to ensure all safety procedures are complied with and that risk to personnel is minimized. The Safety Officer shall have full authority to intervene and control or stop any aspect of the operations when in his/her judgment, a potential or real risk to personnel exists. The safety officer shall not be assigned other duties that interfere with safety responsibilities. Responsibilities of the Safety Officer(s) will include but not be limited to prevention of unsafe acts and elimination of unsafe conditions. Company officers acting as instructors will be responsible for the direct supervision of assigned students and their safety and welfare, including the prevention of unsafe acts and the elimination of unsafe conditions. The safety officer shall provide for the safety of all persons on the scene, including students, instructors, visitors, and spectators. The safety officer shall not be assigned other duties that interfere with safety responsibilities.

All firefighters involved in burn building training fires shall have received training to meet the performance objectives of Firefighter 1, NFPA 1001 in:

- Safety
- Fire behavior
- Portable extinguishers
- Personal protective equipment, Including SCBA
- Ladders
- Fire hose, appliances, and streams
- Overhaul
- Water supply
- Ventilation
- Forcible entry
- Building Construction

Accountability

Accountability Tags will be collected by a designated accountability officer. Participating personnel will turn in their tag or passport to the accountability officer. (This position does not have to be an instructor)

One officer on the scene shall be designated as an accountability officer and will assume the accountability Functions (this may be Command). Personnel Accountability Report or "PAR" will be used at the following accountability benchmarks:

- At conservative timeframes consistent with the "working" air supply of participants
- Any report of a trapped or missing firefighter
- Upon exiting the structure
- Sudden hazardous event
- At the discretion of Command

No fire or civilian personnel shall be permitted to act as a victim(s) during training fires.

Personal Safety Equipment (PPE)

To reinforce safety procedures, a protective clothing and equipment inspection shall be conducted on all firefighters immediately prior and after engaging in suppression activities. The inspection shall ensure that all clothing and equipment is serviceable and worn in a manner to provide the maximum personal protection.

REQUIRED WATER SUPPLY & APPARATUS

Two separate sources of water supply shall be established, one of which must be a properly functioning hydrant with sufficient flow. All fire attack hoselines shall be supplied by a pumper with its own hydrant water supply. The RIT unit (backup) hoselines shall be supplied by a separate water supply. All hoselines must be capable of delivering a minimum of 95 gpm and should be checked for sufficient flow and operation, immediately prior to igniting the fire. Booster tanks must be full during evolutions and a minimum of 500 gallons in order to consider as a back-up water source.



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BURN BUILDING PREPARATION

- All doors, windows, scuttles, ventilation devices, lighting, and temperature monitors shall be checked and operated prior to any live fire conditions to ensure correct operation. Doors must be unlocked and latches/padlocks removed or secured in an unlocked/unlatched position
- Hose lines and advancing crews can cause the metal dividers to move. ALL movable divider walls must be checked to ensure the panels are plumb. Turnbuckles must be tight and aligned with floor joists to prevent dividers from kicking out and falling. This must be monitored during and after evolutions.
- Ladders must only be placed on the flat metal support pads alongside or above the window openings.
- Burn buildings shall be left in a safe condition upon completion of each live fire exercise.
- Debris hindering the access or egress of firefighting personnel shall be removed before continuing further operations.
- Approvals from Air Quality Control are not necessary if complying with this document.
- **Pre and Post Burn Inspection sheets must be completed and turned into the training committee chairman.**

PRE-PLANNING

- A pre-fire tour of the burn building is required.
- Weather
- Hazards - inside and adjacent to the burn building
- **Agencies must utilize the "Ky. Fire Commission Live Fire Checklist" if your department has not already prepared an NFPA 1403 compliant checklist**

ATTACK PLAN

The Officer in charge shall develop an attack plan based upon information obtained during the pre-plan and building preparation stages.

The Attack Plan shall specify:

- Points of ignition
- Amount of fire load
- Position of attack lines
- Position of RIT units (and RIT Line)
- A rescue plan
- Accountability plan

All personnel involved in the drill shall be instructed on each element of the attack plan prior to igniting the structure and shall receive a walk through briefing of the building prior to each training fire. An evacuation plan and signal shall be reviewed, demonstrated and agreed upon.

NOTIFICATION OF TRAINING FIRE ACTIVITIES

Prior to conducting training fires, the following notification must be made:

- Kenton County Dispatch Center - 356-3191

STARTING THE FIRE

The use of flammable or combustible liquids, as defined in NFPA-30, shall be prohibited for use in live fire training evolutions. Only Class A materials shall be used in live fire training. The ignition process will be conducted by an Ignition Officer under the direct supervision of the Safety Officer. The ignition officer will regulate the fuel load for each evolution to maintain a tenable atmosphere inside the burn rooms.

Class A burn materials should consist of:

- Clean wood pallets (no more than 4 standard size / burn)
- Straw bales (no more than 100#/ burn)
- Crushed paper bales (no more than 100# / burn)

The ignition of the fire shall be coordinated through Command so the burn rooms do not become overheated.

Burn room temperature must be continually monitored by the Instructor-in-Charge. He may designate a knowledgeable and responsible firefighter to keep him informed. Temperature should not exceed 1000 degrees at ceiling level. Time and Temp. Probe readings must be recorded on the attached Burn Building



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Temperature Log (attached) just prior to entry of any crew and no less than 10 minute intervals during burn evolutions.

A total of four burns maybe done in each burn room per day or 4 hour cooling period

Burn Sequence Chart

	Pallets	Straw Bales	Crushed Paper Bales
Burn 1	4 Standard Size pallets	100 Pounds	or 100 Pounds
Burn 2	3 Standard Size pallets	50 Pounds	or 50 Pounds
Burn 3	2 Standard Size pallets	25 Pounds	or 25 Pounds
Burn 4	1 Standard Size pallets	25 Pounds	or 25 Pounds

The fuel loads per evolution and the maximum number of sequential evolutions in each burn room shall not be exceeded under any circumstances.

A tile warm up period of 10 mins shall occur prior to any training activities starting. This warm up period will include the ignition officer igniting the materials in the burn room in accordance with the Burn Sequence Chart and keeping the fire "In Check" by spraying water at the ceiling for a period of 10 mins.



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ON-SITE BURN OPERATIONS CHECKLIST

- ☐ · Adequate fire apparatus on site
- ☐ · EMS on-scene and capable of providing baseline vitals
(Agencies must arrange for EMS - Covington EMS will not be responsible to assume this role)
- ☐ · Drillfield entrance/exit must remain unblocked
- ☐ · Personnel wearing structural PPE may use the restrooms in the Classroom building provided they are accessed from the exterior restroom doors. The classroom building is otherwise off-limits to those wearing Structural PPE.
- ☐ · Separate water sources
- ☐ · Fire load; conservative; not excessive
- ☐ · Ignition location determined
- ☐ · Safe ignition fuel utilized – flare or torch
- ☐ · Participants & Instructors - in full protective clothing / SCBA
- ☐ · Protection line in place for Ignition Officer; manned and charged
- ☐ · K.C. Training Committee Representative on-scene
- ☐ · Safety Officer on-scene
- ☐ · Fireground Perimeters established – observers in safe area
- ☐ · Command established, location identified and announced
- ☐ · All radios checked for proper functioning/channel
- ☐ · Rescue (RIT) staffed by minimum of two **Instructors**
- ☐ · Accountability officer established
- ☐ · Attack lines in place, flow tested - minimum of 95 gpm each
- ☐ · RIT/Backup lines in place, flow tested - minimum of 95 gpm each
- ☐ · Attack lines from one pumper, RIT lines from a separate pumper
- ☐ · Fire attack entry and RIT units in full protective clothing, PASS and SCBA checked for proper functioning
- ☐ · 1403 Instructors in charge of each attack and RIT unit
- ☐ · Attack plan established and understood by all
- ☐ · Walk through briefing conducted for all crews
- ☐ · Rescue plan established and understood by all
- ☐ · Accountability boards located within sight of point of entry
- ☐ · Rehab established



Burn Building Temperature Log

Peak temps are to be recorded every 10 minutes and immediately prior to crew entry

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PRE BURN CHECKLIST

EXTERIOR

- ☐ Doors and door latches operate properly
- ☐ Windows and window latches operate properly
- ☐ No materials or debris on any side that could hamper training or emergency escape operations
- ☐ Temperature control box functional, no probe wire frayed
- ☐ Exterior walkway and steps in operational condition
- ☐ All exterior doors and windows unlocked, including slide bolts on burn room doors
- ☐ Check for major structural damage
- ☐ Check for harmful rodents, insects, and vegetation

INTERIOR

- ☐ Complete burn room tile damage diagrams for both rooms
- ☐ Any damage should be noted on corresponding diagrams
- ☐ Excessive damage or missing tiles will render the room inoperable Temperature control box functional, no probe wire frayed
- ☐ Ensure that burn room material baskets are opposite the room from temperature sensors
- ☐ All exterior doors and windows unlocked, including slide bolts on burn room doors
- ☐ Ensure search area dividers are secure
- ☐ Remove excessive material and debris from interior
- ☐ Ensure smudge pots are in a safe locations
- ☐ Check for harmful rodents, insects, and vegetation
- ☐ Remove rodent feces



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POST BURN CHECKLIST

GENERAL

- ☐ Buildings are clean and left in a safe condition upon completion of live fire training
- ☐ Report any damage to props/facility, safety issues or injuries to the Kenton Co. Fire Chiefs Assn.
- ☐ Restrooms or classrooms used must be cleaned before departing drillfield
- ☐ Complete the drillfield use log
- ☐ Participants are rehabbed and re-hydrated.

EXTERIOR

- ☐ Doors and door latches operate properly
- ☐ Windows and window latches operate properly
- ☐ No materials or debris on any side that could hamper training or emergency escape operations
- ☐ Temperature control box functional, no probe wires frayed, make sure temperature monitor is returned
- ☐ Exterior walkway and steps in operational condition
- ☐ All exterior doors and windows locked, including slide bolts on burn room doors
- ☐ Check for major structural damage
- ☐ Ensure that area around the burn building and dumpster is clear of debris
- ☐ Debris is properly overhauled and then placed in the dumpster, check dumpster to ensure it is not over flowing

INTERIOR

- ☐ Complete burn room tile damage diagrams for both rooms
 - o Any damage should be noted on corresponding diagrams
 - o Excessive damage or missing tiles will render the room inoperable
- ☐ Tiles should be given a 10 minutes cool down period after final fire extinguishment before cleaning room No materials or debris on any side that could hamper training or emergency escape operations
- ☐ Ensure that burn room material baskets are extinguished and emptied
- ☐ Ensure search divider are secure
- ☐ Debris is properly overhauled and then placed in the dumpster
- ☐ Debris is removed/flushed from corrugated voids between floors



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- ☐ Ensure smudge pots are extinguished and emptied
- ☐ All areas of burn building should be hosed down to remove debris

RESPONSIBILITIES OF PERSONNEL

****All Instructors Shall Be 1403 Instructors per KY Fire Commission Guidelines****

INSTRUCTOR-IN-CHARGE / COMMAND

- The instructor-in-charge shall be responsible for full compliance with the NFPA 1403 standard.
- Plan and coordinate all training activities
- Monitor Activities to ensure safe practices
- Inspect building integrity prior to each fire
- Assign instructors:
 - o Attack hoselines
 - o Backup hoselines
 - o Functional assignments
 - o Teaching assignments
- Brief instructors on responsibilities:
 - o Accounting for assigned students
 - o Assessing student performance
 - o Clothing and equipment inspection
 - o Monitoring safety
 - o Achieving tactical and training objectives
- Assign coordinating personnel, as needed.
- Emergency medical services
- Communications
- Water supply
- Apparatus staging
- Equipment staging
- Breathing apparatus
- Personnel welfare
- Public relations
- Ensure adherence to this standard by all persons within the training area

SAFETY OFFICER

- Prevent unsafe acts
- Eliminate unsafe conditions
- Intervene and terminate unsafe acts
- Supervise additional safety personnel, as needed
- Coordinate lighting of fires with instructor-in-charge
- Ensure compliance of participants' personal equipment with applicable standards:

- o Protective clothing
- o SCBA
- o PASS devices

- Ensure that all participants are accounted for, both before and after each evolution.
- Ensure a baseline vital screen is completed on all participants

IGNITION OFFICER

- One person shall be designated as the "Ignition Officer" (Students are prohibited)
- The ignition officer shall wear full protective clothing, including self-contained breathing apparatus (SCBA), when performing this function.
- A charged hose line shall accompany the ignition officer when igniting any fire.
- Primary responsibilities include:
 - o Control the materials being burned.
 - o Acting under the direction of the Instructor-In-Charge to ignite or cease igniting of the training fire.
 - o Fires shall be ignited by the ignition officer in the presence of and under the direct supervision of the safety officer.

INSTRUCTOR

- Monitor and supervise assigned students (no more than five per instructor)
- Inspect students' protective clothing and equipment (+ Adequate Air volume)
- Account for assigned students, both before and after evolutions
- Ensure all students receive adequate rehab and re-hydration between evolutions
- No one under the influence of drugs or alcohol are allowed to participate
- Notify Instructor In-Charge immediately, if unable to fulfill responsibilities

STUDENT

- Acquire & provide documentation of NFPA 1001 prerequisite training



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- Become familiar with building layout
- Properly don full protective clothing
- Properly don/use SCBA (Check Air Volume)
- Obey all instructions and safety rules
- Inform Instructor if injured or feeling ill Hydrate before & between evolutions
- Provide documentation of prerequisite training & OSHA 1910.143 respiratory protection compliance when from an outside agency
- No one under the influence of drugs or alcohol are allowed to participate

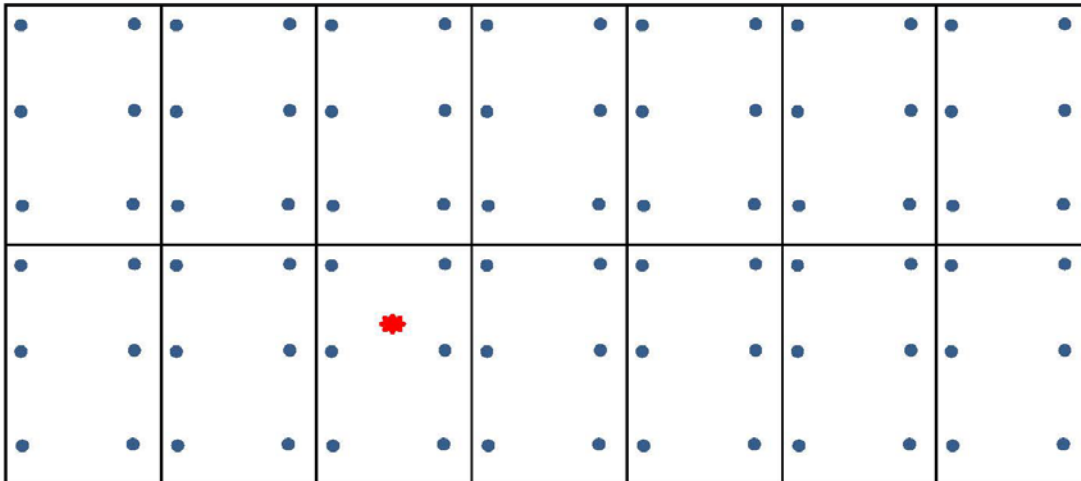
TILE DIAGRAMS



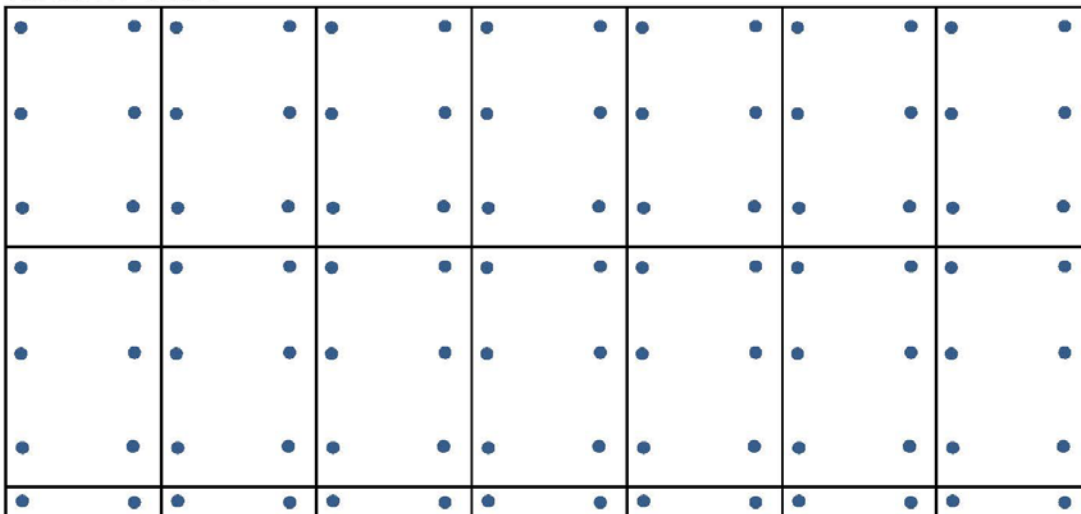
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Division 1 - Side A



Division 1 - Side C



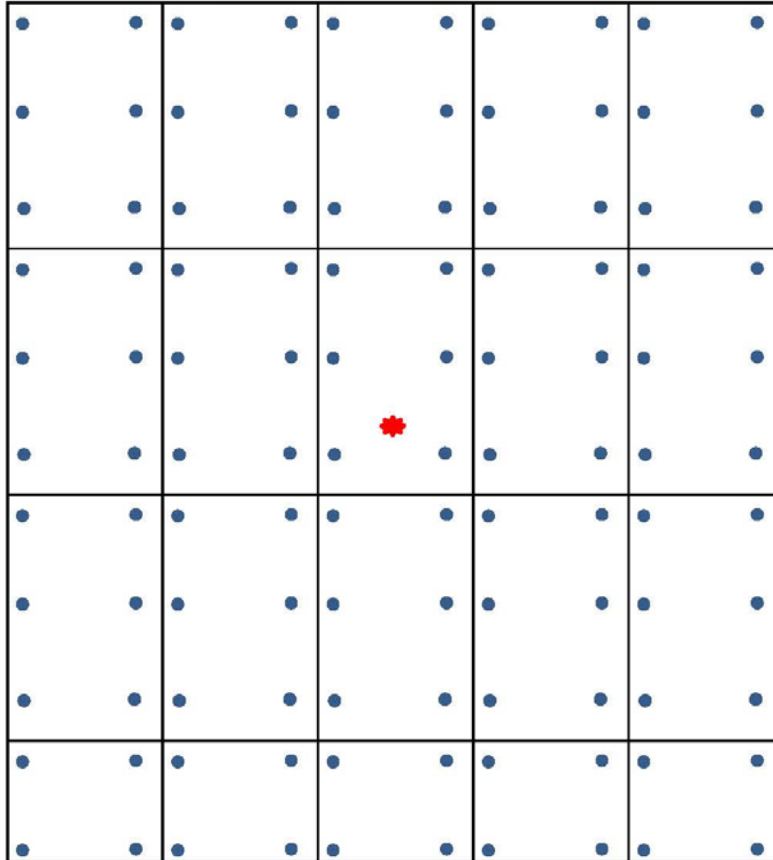
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Division 1 - Ceiling



NOTES:



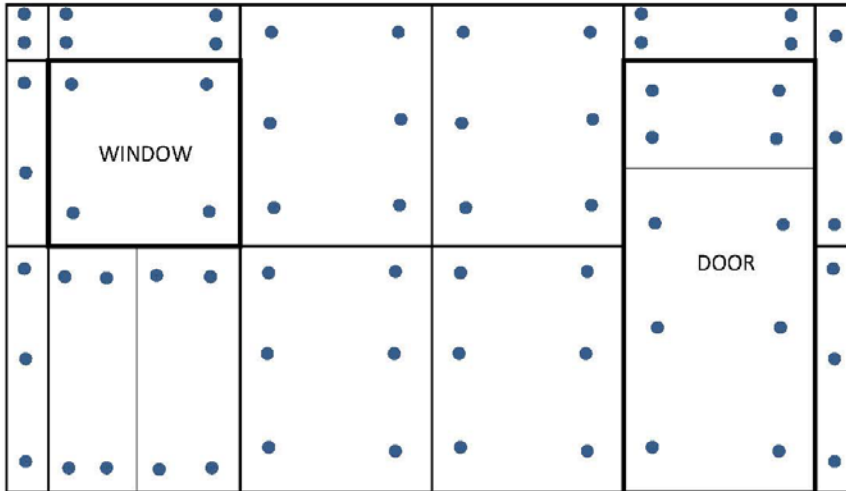
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Division 1 - Side D



Division 1 - Side B



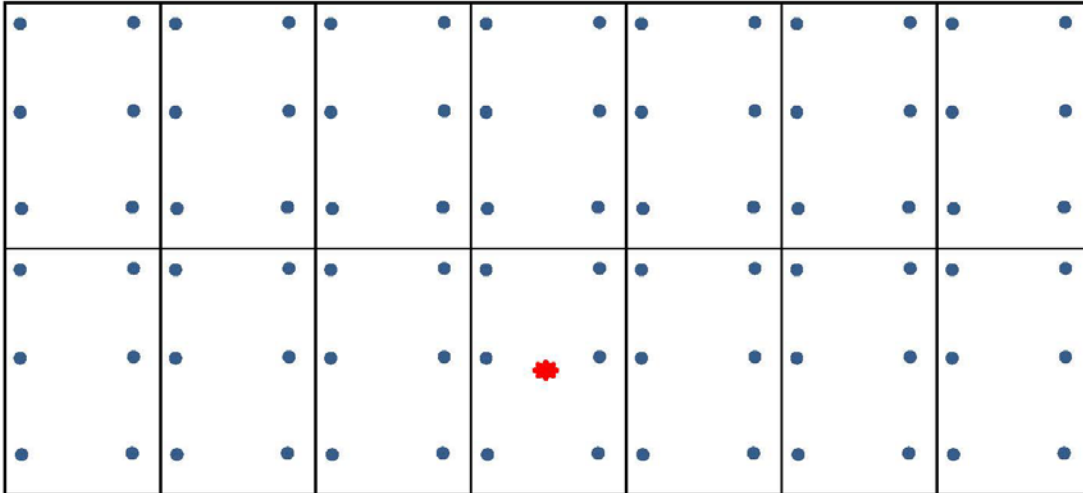
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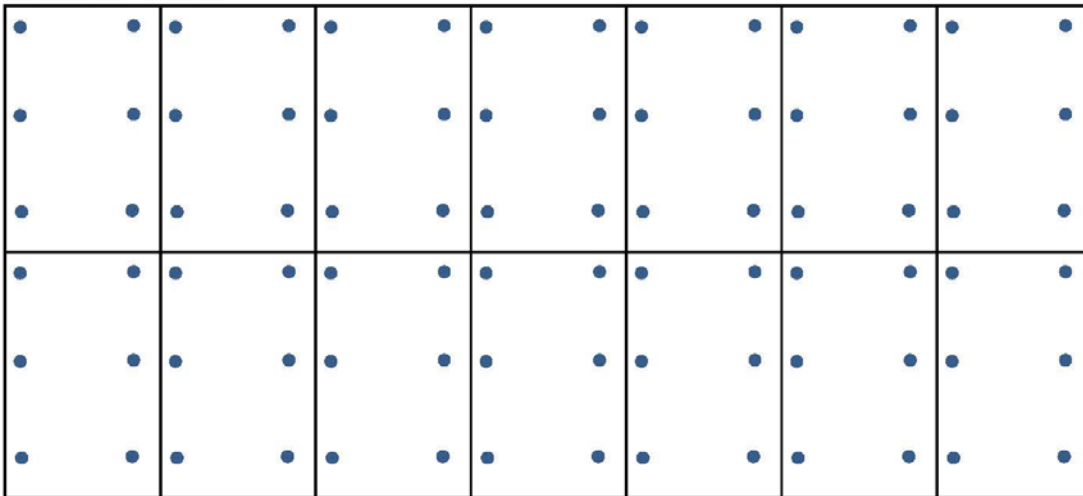
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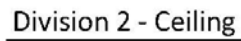
Division 2 - Side A



Division 2 - Side C



NOTES:

A 5x5 grid of points. The points are arranged in a regular pattern. The central point, located at the intersection of the third row and third column, is highlighted with a red star. All other points are represented by small blue dots. The grid is defined by thin black lines.

NOTES:

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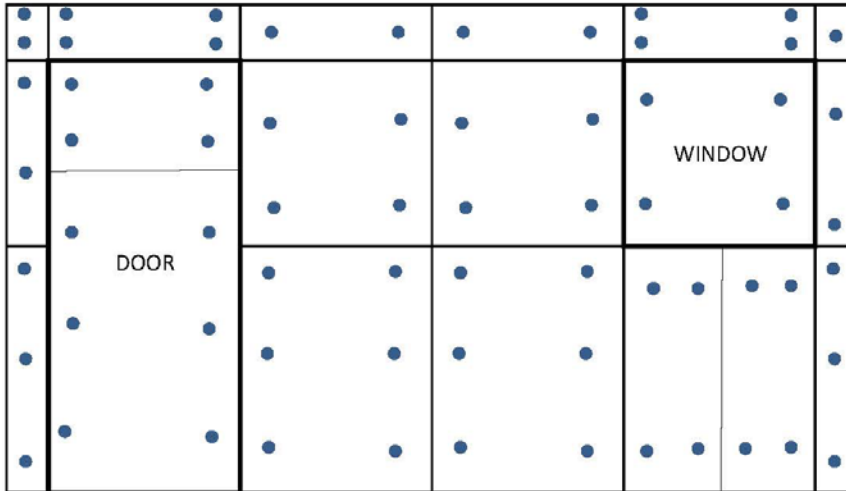
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Division 1 - Side D



Division 1 - Side B



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