

# SUPREME LOCK SOLUTIONS LTD.

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## YOUR SECURITY SOLUTION!

### WHAT TYPE OF SAFE DO I REALLY NEED?

At **Supreme Lock Solutions Ltd.**, we hear that question quite often, so we'd like to share some information with you in the hopes that it may assist you with this most important decision and educate you about safe options based on your security needs.

Safes have been protecting valuables for hundreds of years, but did you know that many home and business owners are using the wrong safe for what they are trying to protect?

#### How does one decide on what type of safe?

First of all, you need to decide on what it is you are trying to protect and from what or whom. Cash, jewelry, documents, important papers, guns, or computer data could all require a completely different type of safe.

Let's face it; most people want the best safe for the cheapest price, but that doesn't always translate into what protection you really require in a safe.



SS-035



ES-080



SS-350

## Questions to consider before you purchase a safe

### What do you need to store or protect?

- Measure the largest items you intend to store. Non-negotiable paper documents and records usually can be housed in a fireproof safe. However, if the items are primarily valuables such as cash, bullion, coins or jewelry, then they should be stored in an appropriate burglary resistive safe.

### Level of protection required?

- Type and degree of protection, is dependent on the nature of the property that you wish to secure. Safes are built to meet certain fixed standards for either fire or burglary resistance.

### Insurance or regulatory requirements?

- You might consider asking your insurance company what safe ratings they require to provide you with coverage. When you begin the search for a safe it is a good idea to speak to your insurance agent and see if a particular type of safe will reduce your insurance costs. Many times you can justify the additional expense of a higher security safe because of the premium reduction.

### Size or internal capacity of the safe?

- Plan to buy a safe whose interior dimensions call for at least 25% more room. Be aware that the inside and outside dimensions of the safe vary considerably. Many safe buyers add up to 50% more room to plan for future growth.  
\*Remember, once you install the safe it'll never get bigger, but you will always find more items you would like to protect.

### Where will you locate your safe?

- Final placement of your safe is dependent on how much space you have available and how the safe will be moved to this location. Be sure to measure door widths and heights and compare to your safe outside dimensions. The combination lock and door hinges will add another 2" - 4" to the size. Also, if you are thinking about moving a large, heavy safe up or down stairs, be sure that the stairs (and the areas that the safe will be moved across) are strong enough to support this weight.

### Price?

- Price is determined by the size and type of safe you wish to purchase. Prices can be anywhere from reasonable, for small fire safes, up to very expensive for jewelers safes. Quality and construction does affect the level of protection or security and therefore the price. The lowest priced safe may not provide the protection you really require.



## How do you decide on the type of safe you require versus what you are willing to spend?

Safes are manufactured with various construction features based on what they are designed to store and protect. Educate yourself about your options and consult a professional safe dealer for more specific information on choosing the most suitable safe for your security requirements based on your budget.

One safe does **not** fit all, and all safes are **not** created equal.

Understanding how a safe is constructed, why, and what level of protection it is meant to provide is important for selecting the safe most suited to your security needs.

## When buying a safe you have 3 main types to choose from:

Burglary-resistant safe

Fire-resistant safe

Burglary and fire resistant (composite) safe



This is a **BURGLARY RESISTANT** safe. It is engineered and constructed to protect cash and valuables against experienced burglars.

**It gives little protection against heat.**



This is a **FIRE** safe. It gives fire protection and is engineered and insulated to protect its contents against heat.

It is **NOT** designed to keep out an experienced burglar.



This is a (combination) **COMPOSITE** safe. The outer material is metal and the inner layer is a special composite material that provides both burglary and fire resistance.

It gives both burglary and fire protection.

## Burglary Safes

Burglary safes are designed to provide protection against forced-entry; however they have no fire protection. They are constructed with solid steel plate or a combination of solid steel and composite fill material such as concrete. Hardened and drill-resistant metals are often used to slow down attempts to break into this safe. A burglary safe can be designed and constructed to provide greater resistance to forced entry, but no safe is completely burglar proof. The purpose of the safe is to deter burglaries, prevent thefts by unskilled thieves, and delay the skilled burglar.

Burglary safes are classified (**see below**) by the types of burglary tools that they are designed to resist, and the amount of time that a burglar with these tools needs to penetrate the safe. The more types of tools that the safe is designed to resist and the longer it takes to penetrate it, the better the protection. In general, the better the protection a safe provides, the more it costs, and the more it weighs.

**Class rating:** 1-5 is based on a combination of door and wall thickness, and in the higher ratings (3-5), resistance to certain forms of attack such as drilling and cutting with a torch. Insurance companies use this rating to designate how much cash may be kept in the safe.

Burglary resistant safes are classified in the following categories:

- **B-Rate:** (U.L. RSC, Residential Security Containers): Residential burglar resistant rating with a ½” steel door and a ¼” steel body. B-rate is a catchall rating for essentially any box with a lock on it. The safe industry had an unwritten standard of ¼ inch body, ½ inch door. No tests are given to provide this rating. When buying a B-rate safe, look at things such as lock work, hard plates, and relocks.
- **C-Rate:** This is defined as a ½ inch thick steel box with a 1-inch thick door and a lock. As before, No tests are given to provide this rating. Look at the lock work, relocks and other features when making your decision. A little better than the above with a 1” steel door and a ½” steel body.
- **Class 2 (TL-15):** Tool resistant by professionals for 15 minutes. Only the door is attacked. The body must be 1” of steel or greater and the safe must weigh at least 750 lbs. or have a provision for anchoring.
- **Class 3 (TL-30):** Tool resistant by professionals for a minimum of 30 minutes. Only the door is attacked. The body must be 1” of steel or greater and the safe must weigh at least 750 lbs. or have a provision for anchoring.
- **Class 4 (TL TR 30):** Tool/torch resistant by professionals for 30 minutes.
- **Class 5 (TL TR 60):** Tool/torch resistant by professionals for a minimum of 60 minutes. The safe must weigh at least 1000lbs. or have provision for anchoring.
- **X6:** The addition of X6 (i.e. TL-60X6) means that the requirements apply to all six sides of the safe and not just to the door. It can only apply to a rating of TL-15 and higher.
- **TX:** The addition of TX means that the safe will resist nitroglycerine and other high explosives for a specific amount of time.

**UL rating:** Is a system developed by Underwriters Laboratory which rates safes based on how long they will resist various forms of attack. The UL ratings start at 15 minutes and go to 1 hour. Keep in mind that any UL designated burglary safe is of high quality and gives excellent protection.

They also add the following letter designations:

- **TL:** Tool resistant
- **TR:** Torch resistant
- **TRTL:** Torch and tool resistant
- **X6:** Means on all 6 sides.

Need more  
UL information?  
visit [www.ul.com](http://www.ul.com)



## Burglary Ratings Explained

### U.L. Label – Burglary Classification TL-15:



Signifies a combination-locked safe designed to offer a limited degree of protection against attack by common mechanical and electrical hand tools and any combination of these means.

#### Construction Requirements

- U.L. listed Group II, 1 or 1R combination lock.
- 750 lbs. minimum or comes with instructions for anchoring in a larger safe, concrete blocks or on the premises where used.
- Body walls of material equivalent to at least 1" open hearth steel with a minimum tensile strength of 50,000 P.S.I.
- Walls fastened in a manner equivalent to continuous ¼" penetration weld of open hearth steel with minimum tensile strength of 50,000 P.S.I.
- One hole ¼" or less, to accommodate electrical conductors arranged to have no direct view of the door or locking mechanism.

#### Performance Requirements

Successfully resist entry\* for a net working time of 15 minutes when attacked with common hand tools, picking tools, mechanical or portable electric tools, grinding points, carbide drills and pressure applying devices or mechanisms.

Net working time means "when the tool comes off the safe the clock stops". There are over fifty different types of attacks that can be used to gain entrance into the safe. Usually they will try only 2 or 3 based on what they know about the product.

### U.L. Label –Burglary Classification TL-30:



Signifies a combination-locked safe designed to offer a moderate degree of protection against attack by common mechanical and electrical hand tools and any combination of these means.

#### Construction Requirements

Construction requirements are identical to the TL-15 above. Tests are essentially the same as the TL-15 tests except for the net working time. Testers are allowed 30 minutes and a few more tools (abrasive cutting wheels and power saws) to help them gain entrance. The label signifies the testers were unable to open the door or make a 6" square opening entirely through the door or front face within 30 minutes. Keep in mind these engineers have the manufacturing blue prints and can disassemble the safe being tested before the test begins to see how it works.

**TL-30 x 6** - The TL-30 (30-minute) test is conducted on all six (6) sides of the safe.

### Specialized burglary resistant safes:



### In-floor Safes:

- Round or square tube with a heavily constructed lid which lifts out when unlocked. The tube is usually installed in a concrete floor or it can be installed on the floor surface in a concrete block which adds weight and protects the tube from attack.
- Low cost for good protection



### Drop Safes:

- Allows envelopes or bank bags to be inserted into the safe while the safe remains locked. The drop can be as simple as a slot in the lid of an in-floor safe or it can be an elaborate hopper or drawer designed to allow large items to be inserted.
- Used where frequent cash deposits must be made to deter robbery.
- Usually the manager is the only one with access to the “dropped” cash.
- These safes are never UL burglary rated and are not recommended for long term storage of cash.
- Quite light and should be bolted to the floor or counter to deter the smash-and- grab thief.

## Fire Safes

Fire safes are designed to provide protection of the safe's contents against damage caused by fire. They are constructed with a thin-metal, double-wall design which allows a fire-resistant insulating material to be put between the walls. In the event of a fire, the insulating material releases moisture which keeps the interior safe temperature below the burning point of paper. These safes are rated by the length of time they will protect their contents under test conditions. A ½ hour rating is used only for small fire-insulated boxes. Most fire-resistant safes have 1-hour or 2-hour ratings. These are adequate for protection of paper records in normal residential or commercial fires. If a safe is labeled as a fire resistant container, that label is usually provided by the Underwriters Laboratory (UL). However, there are other testing agencies which test and label safes, such as Japan Institute of Standards (JIS). These labels are equivalent to UL labels. Just as burglary safes are not "burglar-proof", fire safes are not "fire-proof", they only provide resistance to a certain type of fire for a certain period of time, hopefully long enough for the fire department to arrive and extinguish the blaze.

The burglary resistance of a fire safe is minimal. Any metal box with a combination lock is described as a Class-1 burglary resistant container.



# Fire Ratings Explained

## U.L. FIRE RESISTIVE RATING

### CLASSIFICATION

THE FOLLOWING IS AN EXPLANATION OF THE UNDERWRITER'S LABORATORIES' FIRE RESISTANT CONTAINER TESTING PROCEDURES ON THE CLASS 350°F, ONE HOUR AND TWO HOUR FIRE LABELS.

U.L. Label/Class 350°F-one hour and Class 350°F-two hour. The safe will maintain an interior temperature less than 350°F when exposed to fire for a period of one hour at 1700°F or for a period of two hours at 1850°F. Safe must successfully undergo all other requirements for the Fire Endurance Test, Explosion Hazard Test and the Fire/Impact Test as stated below.

### FIRE ENDURANCE TEST

After heat sensors and paper are placed inside the safe, the unit is locked and exposed to a uniformly distributed fire. The furnace is regulated to reach a maximum temperature of 1700°F for a period of one hour, or 1850°F for two hours, then allowed to cool without opening the furnace. The interior temperature is recorded throughout the test and during the cooling period until a definite drop is shown and must never exceed 350°F.

Once cooled, the unit is opened and examined for usability. The units locking mechanisms and parts fastenings are examined for security and the interior examined for visible evidence of undue heat transmission.

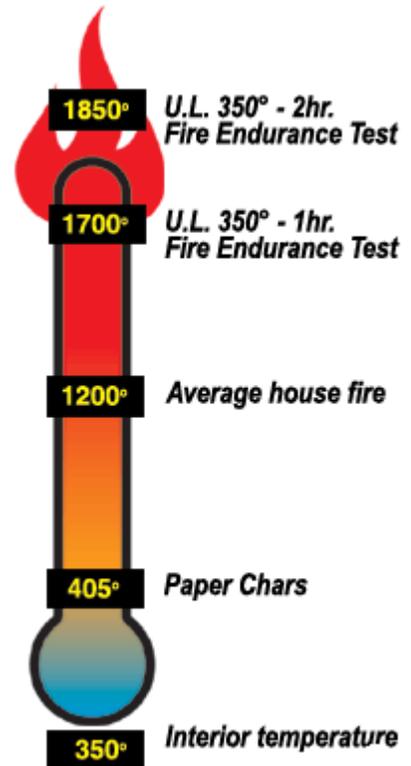
### EXPLOSION HAZARD TEST

The safe is locked and placed into a furnace preheated to 2000°F. This temperature is maintained for 30 minutes (2 hour test is 45 minutes) and if no explosion results, the unit is allowed to cool without opening the furnace doors. Once cooled, the unit is opened and examined for usability. The units locking mechanisms and parts fastenings are examined for security and the interior examined for visible evidence of undue heat transmission.

### FIRE IMPACT TEST (MANUFACTURER'S OPTION)

After the explosion hazard test the safe is removed from the furnace and within two minutes is dropped 30' onto a riprap of brick on a heavy concrete base. After impact the unit is examined for deformation, rupture of parts, damaged insulation and any other openings into the interior of the unit. Once cooled, the unit is inverted and reheated to 1550°F for a period of 30 min. (2 hour test: 45 min. at 1638°F).

Once cooled, the unit is opened and examined for usability. The units locking mechanisms and parts fastenings are examined for security and the interior examined for visible evidence of undue heat transmission.



## **FIRE RATINGS EXPLAINED**

The following information applies to both fire rated safes and burglar/fire rated safes. Remember that a fire safe without a burglar rating is not recommended for burglar resistance. If you need both fire and burglar resistance, always consider a burglary/fire rated safe over a fire rated safe only.

There are many types of fire Ratings. Safe manufacturers will provide testing from a variety of sources such as:

- Private Laboratory Testing
- K.I.S. (Korean Industrial Standard) Fire Test
- U.L. (Underwriters Laboratory) Class of Fire Protection

There are other fire ratings not mentioned such as various European fire rating standards. Many manufacturers hire a reputable private laboratory to test their fire or burglary/fire safes for a fire rating. Safes made in Korea usually have the K.I.S. Fire Test which is a Korean Fire Lab test. The most thorough and recognized fire test is the U.L. Class of Fire Protection.

### **Private Fire Label Testing**

Private label fire testing is where a safe manufacturer hires an independent testing laboratory to test their safe for a specific time period of fire rating. Just like the Korean or Underwriter Lab fire tests, the independent lab places heat sensors inside the safe. The safe is placed in a burn chamber and the temperature is brought up to between 1350- 1750 degrees. Once the desired temperature is achieved the independent lab starts timing how long the temperature stays below 350 degrees F. If the inside temperature stays below 350 degrees for 1 hour or more, then the fire rating is 1 hour, same for 1.5 hours, 2 hours and so on. The importance of the 350 degrees F is that paper (or money) will start to char at approximately 387 degrees and will burst into flames at 451 degrees F. For these reasons, maintaining a temperature below 350 degrees F is what all fire tests look to achieve.

## **Korean Industrial Standards (K.I.S.) Fire Tests:**

Here is an example of how the K.I.S. Fire Test is conducted on a safe for a 2-hour fire rating with an explosion test and a fire impact (drop test):

K.I.S. (Korea Industrial Standards) rated by the KSG-4500 fire resistance tests. Papers and valuable documents will remain protected in accordance with the rating standards against fire, explosion and drop impact during fires.

Fire Safe is tested 2 hours in a furnace with temperature rising to 1850 degrees F.

Explosion- Heated in a furnace to 1852 degrees F in 10 minutes, continued at temperature for 30 more minutes.

Fire Impact- Subjected to standard fire exposure for 45 minutes, dropped 13 feet, returned to furnace upside down, reheated 1 hour.

Safes with the K.I.S. or a private laboratory test still provide great fire resistance. However, the U.L. class of fire protection is recognized as the most complete fire testing today.

**If you are on a budget, we recommend you consider at least a 1 hour fire rating (minimum) to insure ample protection for your documents or valuables.**

## **U.L. Classes of Fire Protection**

Underwriters Laboratories established five fire resistant classifications for record protection. These classifications are based on the type, length, and severity of the test given each classification.

The classification ratings are:

- 350-4 hour
- 350-2 hour
- 350-1 hour
- Insulated record container 350-1 hour
- Insulated record device 350-1 hour

## **3 Tests for Fire Protection**

Three basic tests are provided by the Underwriters' Laboratories for the fire resistance of record protection equipment. These are:

- Fire endurance test
- Explosion hazard test
  - Fire impact test

Equipment in classes A, B, and C are subjected to all three tests. Equipment in classes D and E do not take the fire impact test

## Fire Endurance Test

The fire endurance test measures the degree of resistance which the safe has to temperatures determined by standardized fire exposure conditions.

In preparation for the fire endurance test, the safe is placed in a cold furnace so that all exterior surfaces will be exposed except the bottom. Heat measuring apparatus is installed in the interior of the safe and papers are loosely distributed so that they are in contact with all interior surfaces. The doors of the safe are closed and locked, the furnace is closed and the fire is started.

The heat of the furnace is gradually increased according to set standards of time and temperature. The gas and air supply is adjusted carefully so that the fire is well distributed over the sample, and thermocouples symmetrically distributed in the furnace accurately record temperatures so that the test standards are maintained.

The test sample remains in the furnace for the period required for the desired classification. At the end of the time, the fire is extinguished and the sample is allowed to cool without opening the furnace. Here is the test times and temperatures for the various classifications:

	TIME IN FURNACE	TEMPERATURE REACHING
Class A	4 hours	2000 degrees Fahrenheit
Class B	2 hours	1850 degrees F
Class C	1 hour	1700 degrees F
Class D	1 hour	1700 degrees F
Class E	30 minutes	1550 degrees F

After the test sample has cooled, it is opened and the contents and interior surfaces are examined. The records must still be usable and the interior must show no signs of undue heat transmission. At no time during the test must the temperature inside the safe exceed 350 degrees Fahrenheit. The general security of the safe is also examined. The records are considered "usable" if they can be handled without breaking and if they are decipherable by ordinary means.

## Explosion on Hazard Test

The explosion on hazard test determines whether or not the design of the safe protects it against explosions in case of sudden intense heat exposure. If the safe construction is faulty, the sudden high temperature will cause hydrogen-air-stream mixtures in the insulating material to explode and rupture the insulation and safe walls. This rupture will destroy much of the safe's resistance to fire.

The test for explosion is relatively simple. The empty, closed furnace is pre-heated to 2000 degrees F. The furnace is opened, the test sample is inserted, and the furnace is closed again for 30 minutes while the fire is maintained at 2000 degrees F. After the test, the sample is allowed to cool until it can be handled. If no rupture of the insulation can be found, the sample passes the test.

## The Fire Impact Test

The fire impact test measures the resistance of a safe to impact when in a heated condition. The test simulates the fall of a safe three floors to the basement of a burning building, then lying in the burning embers until cool.

During the test, the sample is placed in a furnace and the fires are lighted. The time and temperature follow the same standards as for the fire endurance test for the length of time determined by the classification desired. At the end of the required time in the furnace, the fire is extinguished. The truck and sample is hoisted so that its bottom is 30 feet above a riprap of brick on a heavy concrete base, and then dropped. The drop is made within two minutes of the time the fire is extinguished.

When the safe has cooled sufficiently to handle, it is inverted, reinstalled in the furnace, and again subjected to the standardized time-temperature conditions for a period determined by the classification desired. After the time is over, the sample is allowed to cool before the furnace is opened. When the doors are forced open, the records must be in usable condition.

The Underwriters' Laboratories Inc. is the most highly respected testing and grading agency in the world. Their testing label of whatever classification means that the safe has passed the highest standards they have established for safes. The integrity of Underwriters' Laboratories through the years is a guarantee to the consumer that no portion of any test which establishes the grade has been slighted in any way.



**Underwriters  
Laboratories Inc. ®**

## Burglary and Fire Composite Safes

The **Composite Safe** is a great solution when you want to protect your valuables from burglary attacks and fire.

The combination burglary and fire-resistant safe is designed to give protection against both burglary and fire. This type of safe is constructed with a defense barrier of outer and inner steel plates creating a single structure enclosing a unique, high-density fire and burglary resistant composite material. The defense barrier houses a proprietary amalgamation (composition) of nuggets and steel fibers to withstand concentrated attacks with the most sophisticated equipment used by burglars today. Some models have a high PSI concrete fill.

These safes can be UL rated for both burglary and fire protection and offer a unique design that combines all the security features of a burglary safe and the peace of mind achieved with a fire safe.

For best results, choose safes that have a recognized UL rating. While there are some non-UL rated safes that can provide adequate protection, you might be better served to purchase a UL-rated safe.

### **Media Safes:**

Media safes are designed to protect electronic media such as computer disks and video tapes. Like regular fire safes, media safes have UL ratings for protection times. Electronic media are more sensitive to heat and humidity than paper, so media safes are constructed differently and much more heavily insulated than regular fire safes with the same rating.

### **Document Safes:**

Properly protect your paper records with fireproof document safes. Keeping your important documents and files in a secure place is important but just as important is storing those documents in something that will protect them in case of fire.

Fire resistant record safes that can resist extreme temperatures while protecting the contents are available and come in a variety of styles and designs.

Keep your documents safe and secure with fireproof document safes.

### **Gun/Rifle Safes:**

For both recreational and safety-concerned gun owners, a gun safe is one of the most important investments they can make. Ensuring the safety of a gun or various guns in and around your home provides an unlimited amount of peace of mind, especially gun safes that are out of sight and considerably inaccessible.

## **Where should you keep your safe?**

The following suggestions apply to most residential or commercial situations:

### **Wall Safes:**

- Consider what is on the other side of the wall; where you are installing your wall safe; will your new safe protrude into that space?
- A wall that backs into a closet, cupboard, or shelf may be considered
- Planning to hide the safe behind a picture, make sure the picture blends into the surroundings.

### **In-Floor Safes:**

- Usually installed in a concrete floor or encased in a concrete block and then placed on the floor
- Consider a basement, garage, or lowest level of the home
- If installing in a concrete floor, make sure the safe will be adequately protected from any possible water penetration. Should a fire ever occur, water is usually used to fight it and an in-floor safe is not watertight.
- Putting your valuables into plastic zip-lock bags will keep them dry in any event

### **All Safes:**

- If your safe is designed so it can be bolted to the floor, doing so would make it much more difficult for a thief to move it.
- Closets may serve as a good location, it may be difficult to get the safe in place, but a thief would have a hard time removing such a situated safe.
- In larger commercial applications, depending on the safe's size and what is being stored, if on any above grade floor, you may want to check with an engineer or building inspector to be sure the floor where you want to place the safe can support that amount of weight.

### **Electronic versus mechanical locks:**

- Electronic locks are easier for some people to open, persons with arthritis, or the elderly may find it easier to push buttons than to turn a dial.
- Modern mechanical locks work very well, once you are shown the proper technique, they are very easy to operate and very reliable.
- Lock choice is based on model or design, as well as personal usage preference.

### **Older Safes:**

- Many older burglary safes are still very reliable, if the lock is still in good working order and has been serviced by a qualified technician, there should be no problem.
- Antique, and really any 15-20 year old record/fire safe would be a different story. The insulating fill material, especially in antique safes, will deteriorate with exposure to temperature extremes and time. You should be very suspect of keeping items you wish to protect from fire in an older fire safe.
- If you plan to use your older safe for storage of valuables you should have it inspected and or serviced by a qualified safe technician.

## Who or where to buy your safe from?

You can choose to buy a safe online, from a department store, hardware store, or from a professional safe retailer or locksmith. The choice is certainly yours. But, do keep in mind that when you buy a safe from **Supreme Lock Solutions Ltd.** you are buying from a professional safe retailer and a professional locksmith.

With over 30 years' experience buying, selling, servicing, rebuilding, and refurbishing a broad variety of safes and vaults here in Canada and the U.S.A., you can rest assured that you are dealing with someone who knows which safe will best suit your unique security requirements.

At **Supreme Lock Solutions Ltd.**, we make our living by keeping our customers satisfied. With our extensive experience in buying and selling quality new and refurbished safes, we know how a particular type or model will perform; we know the features and benefits, and what they are meant to protect.

As a specialist in the field, we like to educate our customers and offer one-stop, convenient safe services, repairs, delivery, installations, maintenance and on-site follow up.

With anyone other than the safe retailer or locksmith you take the chance of not being able to get qualified advice as to what you really need, not being able to arrange prompt service or repair should the need arise.

Buying locally affords the development of a trusting business relationship. Follow-up care and expert services are readily available-when you need them!

Purchasing on the Internet? This may save money up front, but freight, customs and duties might add on unexpected costs. Follow-up sales assistance and services might not be readily available. How do you return a 2000 pound safe?

Are you able to move or deliver the safe yourself? Have you considered how heavy the safe is or the best location or method for installation? You might need assistant with setting a new combination.

For customer peace of mind and satisfaction, **Supreme Lock Solutions Ltd.** offers a complete customer care service, from educating you on your security options and finding the most suitable safe- to prompt delivery, on-site installation, and follow-up service.

**NEED MORE INFORMATION? CALL A PROFESSIONAL TODAY: 902-982-2498**

