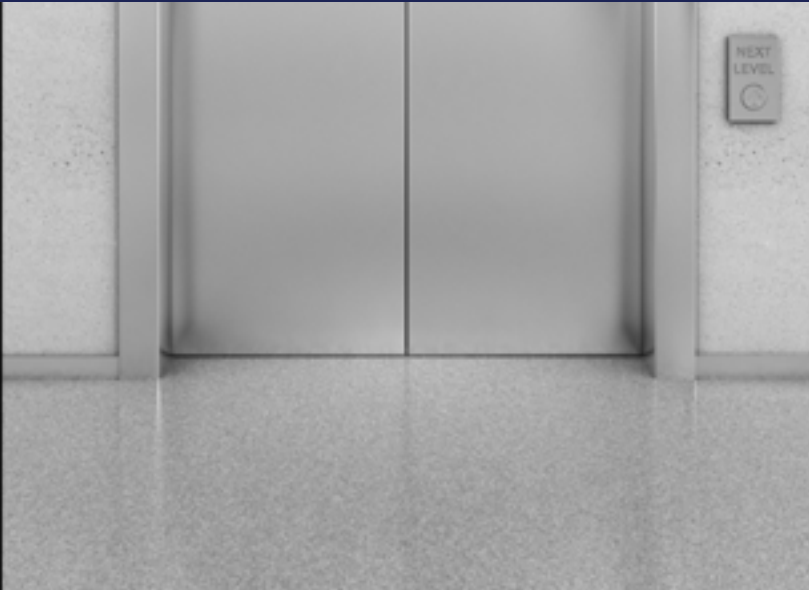




UNDERSTANDING ELEVATOR EMERGENCY COMMUNICATION CODE COMPLIANCE



INTRODUCTION

Few people think of elevator phones as part of a critical communication system and, as a consequence, these phones are sometimes viewed as a nuisance by those that are responsible for providing them. Because telecommunications is not a traditional area of expertise for elevator mechanics, phone issues can sometimes be misdiagnosed. A common remedy for phone trouble is to immediately replace the phone, which can be rather costly. In other cases, the phone lines are considered the issue. This may not always be the case.

THE BAD NEWS:

As much as you kick, scream and fight, you are required by law to provide emergency phones in your elevators and with that comes a set of many codes that you must comply with and are liable for.

THE GOOD NEWS:

It doesn't have to be that hard! We'll walk you through the codes you should be adhering to, phone line suggestions that comply and still save money and a quick and easy checklist to test your emergency phones to ensure that they're working properly.

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ASME CODES YOU SHOULD KNOW

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We will start with the most basic- the emergency communication code required of private residential elevators :

American Society of Mechanical Engineers (ASME) A17.1-2019 Section 5.3.1.20 Emergency Signaling Devices

5.3.1.20.1 Two-Way Communication Means

A two-way communications means permanently installed in the car shall be provided to summon personnel who can take the appropriate action 24 h each day. The two-way communications means shall not be transmitted to an automated answering device.

If the normal power source for the communications means fails, the communications means shall automatically transfer to a source of standby or emergency power capable of providing service for at least 4 h.

The purpose of this requirement is not so that passengers can necessarily make phone calls while they ride, but rather for the sole purpose of summoning help in the event of entrapment. Often, cell phones do not have service in elevators, so this is of utmost importance.

5.3.1.20.2 Emergency Signaling Device

An emergency signaling device operable from inside the car and audible outside the hoistway shall be provided. The operating means shall be labeled "ALARM" or with the appropriate symbol as defined in Table 2.26.12.1.

If the normal power source for the emergency signaling device fails, the emergency signaling device shall automatically transfer to a source of standby or emergency power capable of providing service for at least 1 h.



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When it comes to commercial and other publicly accessible facilities (including multifamily properties), codes become more specific, and, consequently, can seem more complex. Here are the ones you need to know:

American Society of Mechanical Engineers (ASME) A17.1-2019 Section 2.27 Emergency Operation and Signaling Devices

2.27.1.1.1

A communications means between the car and a location staffed by authorized personnel who can take appropriate action shall be provided.

Who is someone who can take "**appropriate action**"? To fulfill this law, whoever is staffed must be able to summon help to elevator, but when you're thinking life safety, is this enough? Some additional items to consider: Can your operators [provide medical instructions](#)? Do they let you know when an issue arises? Do they [keep recordings of calls placed](#)?

2.27.1.1.2

If the call is not acknowledged [2.27.1.1.3(c)] within 45 s, the call shall be automatically directed to an alternate on- or off-site location.

ASME CODES YOU SHOULD KNOW

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2.27.1.1.3

The communication means within the car shall comply with the following requirements:

- (a) In jurisdictions enforcing the NBCC, Nonmandatory Appendix E; in jurisdictions not enforcing the NBCC, ANSI/ICC A117.1, ADAAG, or ADA/ABAAG.
- (b) A push button to actuate the communications means shall be provided in or adjacent to a car operating panel. The push button shall be visible and permanently identified with the phone symbol (see 2.26.12.1). The identification shall be on or adjacent to the phone push button. The communications means shall be initiated when the push button is actuated.



ASME CODES YOU SHOULD KNOW

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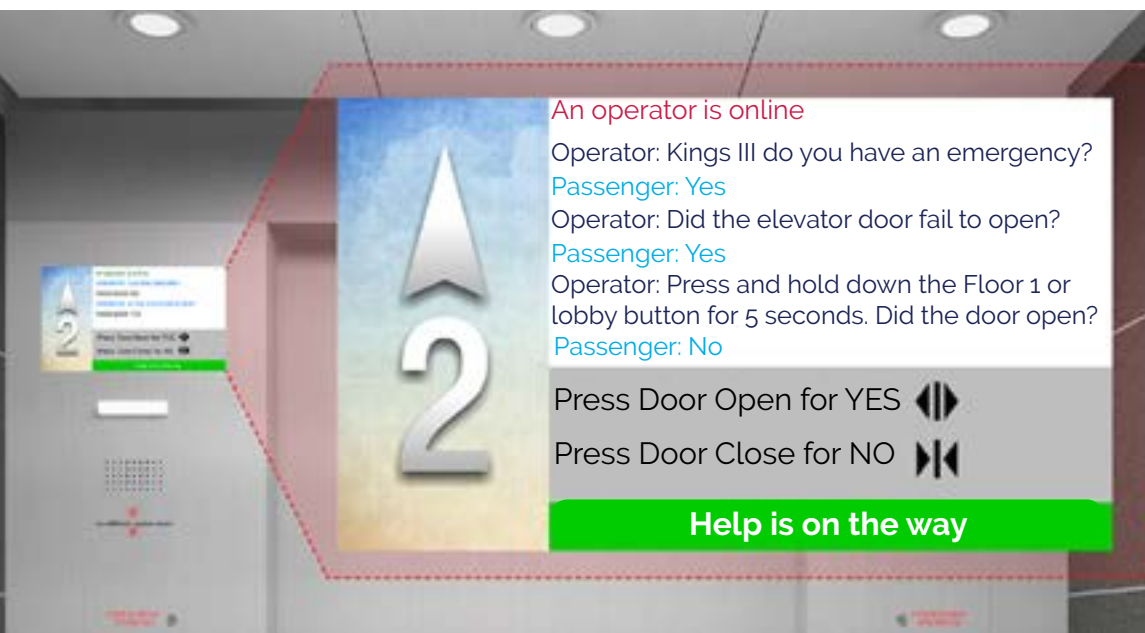
2.27.1.1.3 (cont.)

The communication means within the car shall comply with the following requirements:

- (c) ***New in 2019:** On the same panel as the phone push button, a message shall be displayed that is activated by authorized personnel to acknowledge that communications are established. The message shall be permitted to be extinguished where necessary to display a new message [see (d) and (e)] or when the communications are terminated.
- (d) ***New in 2019:** On the same panel as the phone push button, messages shall be displayed that permit authorized personnel to communicate with and obtain responses from a trapped passenger(s), including a passenger(s) who cannot verbally communicate or hear.
- (e) ***New in 2019:** On the same panel as the phone push button, a message shall be displayed that is activated by the authorized personnel to indicate when help is on the way. The message shall continue to be displayed until a new message is displayed [see 2.27.1.4(c)] or the communications are terminated.

What does this mean?

The elevator must have the ability for authorized personnel to send messages to as well as receive responses from trapped passengers. This includes passengers that cannot speak or hear.



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2.27.1.1.3 (cont.)

The communication means within the car shall comply with the following requirements:

- (f) The communication means shall provide on demand to authorized personnel information that identifies the building location and elevator number.
- (g) The communications, once established, shall be disconnected only when authorized personnel outside the car terminate the call or a timed termination occurs. A timed termination by the communications means in the elevator, with the ability to extend the call by authorized personnel, is permitted if voice notification is sent by the communications means a minimum of 3 minutes after communication has been established. Upon notification, authorized personnel shall have the ability to extend the call; automatic disconnection shall be permitted if the means to extend are not enacted within 20 seconds of the voice notification.
- (h) The communications means shall not use a handset in the car.
- (i) The communications shall not be transmitted to an automated answering system. The call for help shall be answered by authorized personnel.
- (j) Operating instructions shall be incorporated with or adjacent to the phone push button.
- (k) ***New in 2019:** A means to display video to observe passengers at any location on the car floor, to authorized personnel for entrapment assessment, shall be provided.

This is a big overlooked one: Many answering services are automated to have the system answer, press 1 for this, 2 for that, etc. or put callers in a queue waiting for the next available operator. **Code states this is not acceptable.**

What does this mean?

The elevator must have video capabilities for the authorized personnel to view the entire floor of the elevator cab for in the event that they cannot hear a passenger or if the passenger is unable to speak.

ASME CODES YOU SHOULD KNOW

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2.27.1.1.4

Where the elevator rise is 18 m (60 ft) or more, a communications means within the building accessible to emergency personnel shall be provided and shall comply with the following requirements:

- (a) The means shall enable emergency personnel within the building to establish communications to each car individually. The communications shall be established without any intentional delay and shall not require intervention by a person within the car. The means shall override voice communications to outside of the building.
- (b) The communications, once established, shall be disconnected only when emergency personnel terminates the call or a timed termination occurs. A timed termination by the communications means in the elevator, with the ability to extend the call by authorized personnel, is permitted if voice notification is sent by the communications means a minimum of 3 minutes after communication has been established. Upon notification, emergency personnel shall have the ability to extend the call; automatic disconnection shall be permitted if the means to extend are not enacted within 20 seconds of the voice notification.

IN ENGLISH, PLEASE?

- Calls must be answered by live personnel.
- If travel exceeds 60 ft., an accessible phone onsite must be available for emergency personnel to speak with the elevator passengers.
- Phone must be able to break into existing elevator phone calls. If a call is connected to an offsite answering facility the lobby phone must be able to join in the conversation.
- Phone must be able to select which elevator(s) to connect to.
- The elevator phone must automatically answer inbound calls. You must be able to call back in to the elevator and the phone must automatically answer.

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2.27.1.1.4 (cont)

Where the elevator rise is 18 m (60 ft) or more, a communications means within the building accessible to emergency personnel shall be provided and shall comply with the following requirements:

- (c) ***New in 2019:** Once the communications have been established, a message shall be displayed on the same panel as the phone push button, that is activated by the emergency personnel to indicate that help is on-site. The message shall be permitted to be extinguished where necessary to display a new message [see (e)] or when the communications are terminated.
- (d) Operating instructions shall be incorporated with or adjacent to the communications means outside the car. Instructions shall conform to 2.27.3.

Why is this important?

Currently, many elevators only have a light to indicate that help is on the way. The new indicator will provide clarity and additional reassurance to the entrapped passenger.



ASME CODES YOU SHOULD KNOW

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2.27.1.1.4 (cont)

Where the elevator rise is 18 m (60 ft) or more, a communications means within the building accessible to emergency personnel shall be provided and shall comply with the following requirements:

- (e) ***New in 2019:** On the same panel as the phone push button, messages shall be displayed that permit emergency personnel to communicate with and obtain responses from a trapped passenger, including a passenger who cannot verbally communicate or hear.

Why is this important?

This provides additional support to those passengers who are speech or hearing impaired.

- (f) ***New in 2019:** A means to display video to observe passengers at any location on the car floor, to emergency personnel for entrapment assessment, shall be provided.

Why is this important?

A video feed into the cab provides emergency personnel with additional information to better assess the situation. This includes verifying whether a passenger is unconscious, simply nonverbal or perhaps the call is a false alarm, and there is no one in the elevator.

ASME CODES YOU SHOULD KNOW

Kings III Equipment is also designed to be [ADA](#) and [IBC](#) compliant.

We get it-- that's a LOT of information at once. TLDR? Here's a table that breaks down the requirements of ASME A17.1/CSA B-44 showing all versions dating back to 2000. Refer to the year your state follows to determine what you must do to be code compliant. Not sure which year your state requires? [Learn here.](#)

	2000	2004/ 2007	2010/ 2013/ 2016	2019
Two-way communication between elevator & authorized personnel	✓	✓	✓	✓
Machine room communications if over 60 ft of travel	✓	●	●	●
Answer by live authorized personnel- no automated answering	✓	✓	✓	✓
Communication capability for onsite authorized/emergency personnel	✓	✓	✓	✓
On-site monitoring if staffed 24/7 by authorized personnel	✓	✓	✓	✓
Location identification on demand to authorized personnel	✓	✓	✓	✓
Location identification without voice communication (ADA compliance date 1994)	A	✓	✓	✓
Hands free devices only (handsets not approved)		✓	✓	✓
Automatic answer when calling into elevator		✓	✓	✓
Automatic redirect if no answer onsite		✓	✓	✓
Offsite communications shall not interfere with on-site communications		✓	✓	✓
Local telephone line status monitoring and local alert			✓	✓
Two-way message display in cab for hearing and/or speech impaired				✓
Means for authorized personnel to view video of passengers anywhere in cab				✓
Means activated by emergency personnel to change cab message to indicate help is on-site if over 60 ft of travel				✓

✓ Automatic redirect if no answer onsite
 A Required by ADA
 ● Only if remote machine room (2.7.8.4)

PHONE LINE SHARING: COMPLY AND STILL SAVE



Many people resent elevator codes because they believe that it brings with it more hassle and more cost. In fact, a common industry practice cuts corners and operates all elevator emergency phones from a single phone line using line sharing in order to avoid additional costs and labor. This is a dangerous practice and is not code compliant. However, there is a way to avoid these drawbacks and still meet code. Let's take a look:

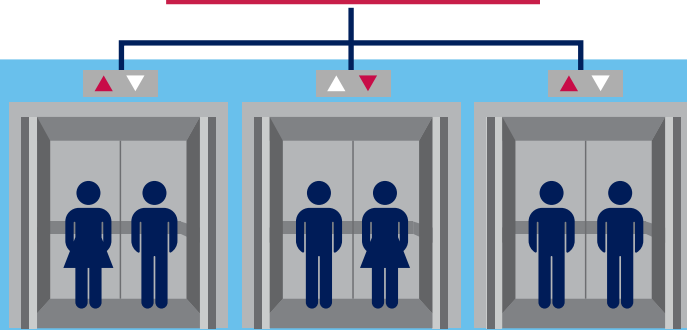
PHONE LINE SHARING: COMPLY AND STILL SAVE

Phone Line Sharing the Wrong Way

TELEPHONE LINE SHARING

Common Industry Practice

SINGLE PHONE LINE



Problem: **Fails ASME and ADA** because all phones will not work simultaneously. One phone off-hook prevents remaining phones from operating properly, often blocking calls completely.

Operator cannot call back into individual elevators. When multiple elevator phones are in use, operators may not be able to play location message.

Simply connecting multiple emergency phones to a single phone line:

- Sacrifices reliable performance for perceived cost savings.
- Does not meet the intent of A17.1 for any year since 1978.

Activating phones on a shared phone line can:

- Block other emergency calls
- Cause connected calls to disconnect
- Prevent retrieval of ADA required location information

A single malfunctioning phone can disable all phones attached to the shared line.

In its simplest form, an elevator phone is connected to a dedicated phone line and is used to call “Authorized Personnel” when help is needed. Sounds simple enough but in many instances, real world application is different. Customers don’t want to pay for phone lines that are seemingly almost never used and certainly not one for every elevator in their building. So, some elevator maintenance companies cave in to this customer resistance and wire all of the phones to the same line (line sharing). You may ask yourself - What could be wrong with that? **Everything!**

For starters, there is often not enough phone line current to support multiple emergency phones in use simultaneously. Remember the past- what happened when you put one too many phone extensions in at your house? The ringers quit working and voice volume decreased. Modern hands free phones experience those same problems but because they are full of electronics, you won’t always get a degradation of performance. Instead, the phone simply won’t work. This is unacceptable and causes blocked calls, disconnected calls, and blocked location information.

PHONE LINE SHARING: COMPLY AND STILL SAVE

Phone Line Sharing the Right Way

TELEPHONE LINE SHARING

The ASME, ADA Code Complying Kings III Solution



Should phone line sharing ever be acceptable? Yes it should, but only when you are certain that appropriate hardware is in place to support multiple phones in use simultaneously. Several companies, including Kings III, offer this. Contrary to mainstream opinion, elevators don't have to have individual dedicated phone lines to be code compliant. Line sharing works, is cost effective and is code compliant if done properly.

Proper line sharing requires a consolidation unit so multiple emergency phones can share a single phone line and still operate simultaneously. This solves the blocked calls issue.

PHONE LINE SHARING: COMPLY AND STILL SAVE

Phone Line Sharing the Right Way

Questions to ask when using a consolidator:

- ✓ Can it share the line with other elevator equipment such as the modems for remotely monitoring elevator performance?
- ✓ Does it have the ability to seize a “non-emergency” phone line for use by emergency phones?
- ✓ Can a secondary line be connected as back-up should the primary line ever fail?

Don't use landlines? You can still save while using a code compliant cellular emergency phone solution. Read about ours in the next section.

CELLULAR SOLUTION

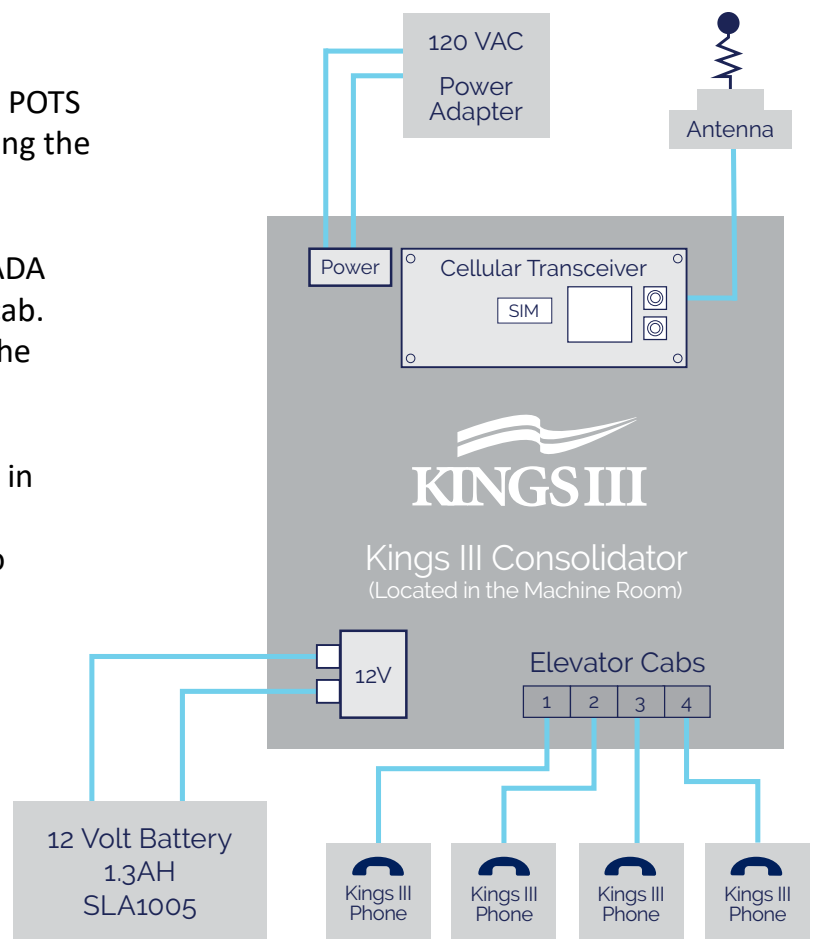
How does Kings III's Skyline cellular service work?

Skyline completely eliminates dependency on POTS lines (Plain Old Telephone Service) by leveraging the mobile network.

For elevators, our solution uses a traditional ADA compliant handsfree phone in each elevator cab. The cellular transceiver is located outside of the concrete & steel-lined shaft.

Traditionally our Skyline cellular unit is placed in a telco room. When necessary, we will install elsewhere on site to achieve a better signal so long as there is a power outlet available.

Skyline utilizes existing wiring in the building (typically between the telecom room and/or machine room and then through the travel cable into the elevator cab) to connect the cellular transceiver to the elevator cab.



CUSTOMER STORY: Extra Space Storage Future Proofs
Emergency Telephone Solution.

[READ HERE.](#)

TEST YOUR EMERGENCY PHONE- A CHECKLIST

Even if phone lines are code-compliant, there is always the possibility of a malfunction, so testing them routinely is essential. While this can seem tedious, it doesn't have to be time consuming. The easiest way to test your elevator involves two testers. If only using one tester, be sure to lock out one elevator. Follow this quick and easy checklist to ensure elevators are Americans with Disabilities Act (ADA), ASME and International Building Code (IBC) compliant:

- ✓ Activate at least two elevator phones at approximately the same time to test that each phone in use at the same time is able to carry on a two-way conversation with emergency operator(s).

This part of the test failed if:

- Only one or none of the calls go through
- One call connects but disconnects once 2nd phone is activated
- The phones will not dial out
- The calls can be completed but the parties cannot hear each other

- ✓ Ask the operator to identify your location and cab numbers, as required by ASME.

This part of the test failed if:

- The operator cannot ID the elevator without aid from the caller.

- ✓ Call from the emergency responder phone (generally located at a guard station on the main egress level or in the fire control room) to test the on-site emergency responder's ability to call directly back to the elevators without intentional delay.

This part of the test failed if:

- The elevator phones cannot be called back directly.

Once all aspects of this simple test are passed, you can be assured your elevator emergency communications system is both working properly and is code compliant. **NOTE: If your state follows ASME A17.1-2019, see [here](#) for additional items to test.**

ABOUT KINGS III

Who We Are

Kings III Emergency Communications has been providing complete, compliant and affordable emergency phone solutions for elevators, poolside, stairwells, parking areas and more for over 30 years. Our all-inclusive solution includes equipment, installation, maintenance and 24/7 monitoring at our very own Emergency Dispatch Center for one low price.

Two of our key differentiators include our smart line seizure technology which eliminates costly dedicated emergency phone lines and our digital recording and storing of all calls. These coupled with advanced operator training and many other value-added benefits allow us to reduce risk, liability and costs for our customers. We are designed, assembled and supported in the USA. Learn more at www.kingsiii.com.

Browse more Kings III guides [HERE](#).

Get a free property assessment [HERE](#).

We'll help you identify opportunities for emergency telephone cost savings and understand the code requirements for your property.

