



[ NEW GEAR UNLOCKED ]

# THE SPACESUIT



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Ready to perform a spacewalk, one of the most dangerous tasks for astronauts

## MISSION

Manually repair or install equipment on the International Space Station, while orbiting Earth every 90 minutes – at about 8 km/s (28,000 km/h)

- KNOWN DANGERS**
- SOLAR AND COSMIC RADIATION
  - MICROMETEOROID IMPACTS
  - EXTREME TEMPERATURE VARIATIONS

WEIGHS ABOUT 145 KG ON EARTH

UP TO 16 LAYERS, INCLUDING FIBREGLASS + TEFLON + KEVLAR



## SPECIAL FEATURES

### HELMET

- Ventilation system for oxygen
- Lights to work in total darkness every 45 minutes
- Camera for ground controllers to follow the work
- Communication device with earphones and microphone
- Coated sun visor to block solar rays



### ULTIMATE BACKPACK (Primary Life Support System)

- Oxygen tank
- Fan to ventilate the suit
- Battery to supply electricity
- Warning system to monitor potential problems within the suit



### GLOVES AND SLEEVES

- Tailor-made gloves
- Molded fingertips for dexterity
- Small mirror on the wrist to look at control panel on chest
- Loops to hold tools
- Checklist of tasks on left arm



### UNDERGARMENTS

- Long underwear with cool water circulating in plastic tubing
- Garment made of highly absorbent polymer to collect urine and transform it into solidified gel



## OVERALL PRESSURIZED SUIT

- Takes 4.5 h to put on
- Contains integrated drink bag
- Maintains life in space for up to 10 h (typical spacewalk = 6.5 h)
- Has parts to fit astronauts from 1.5 m to 1.88 m



## SAFETY PROTOCOL

ASTRONAUTS MUST BE SECURED WITH TETHERS  
In case of accidental separation, astronauts rely on a propulsion system.