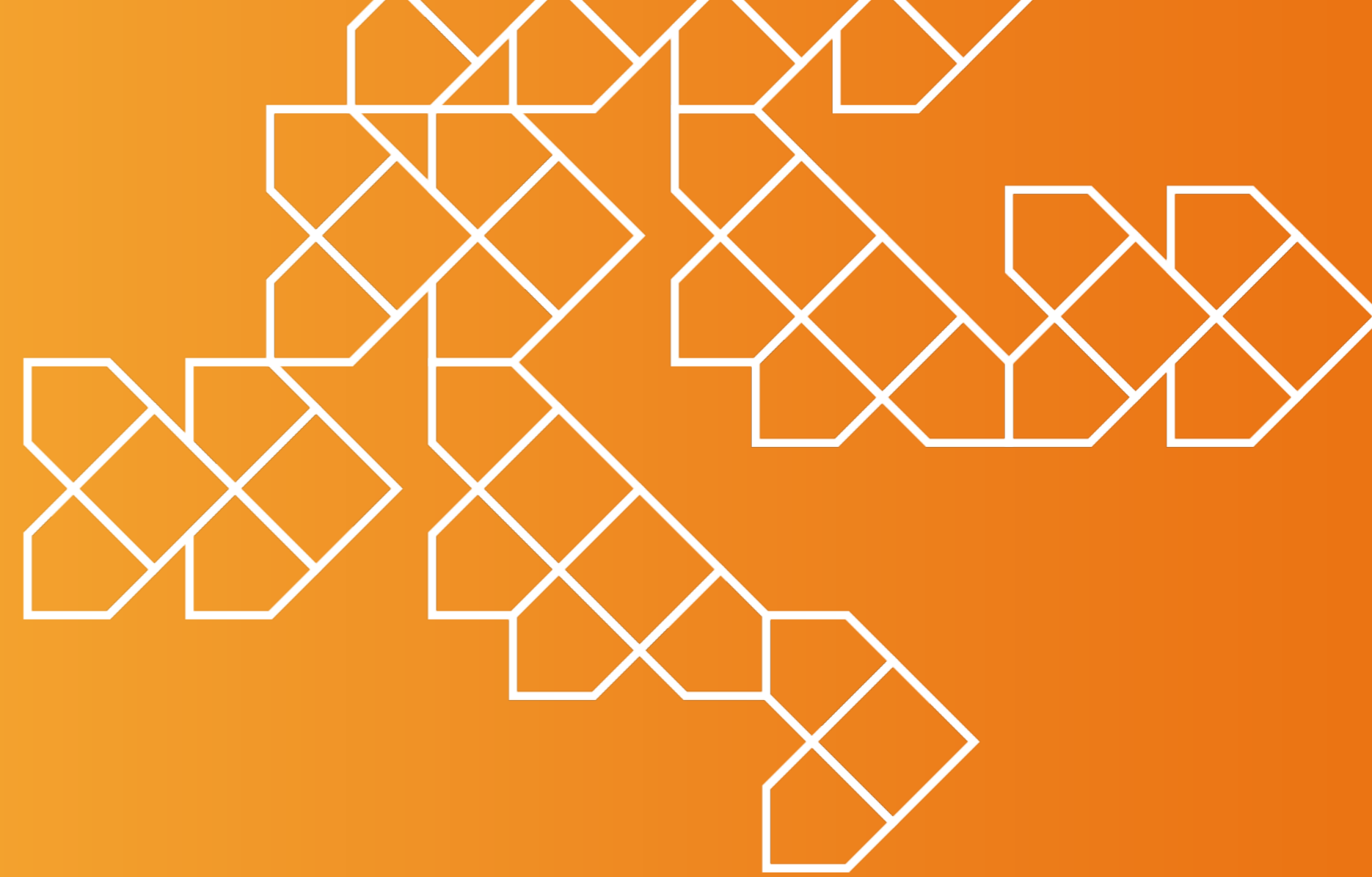




HEALTH AND SAFETY MONTH 2016

Planning for tomorrow





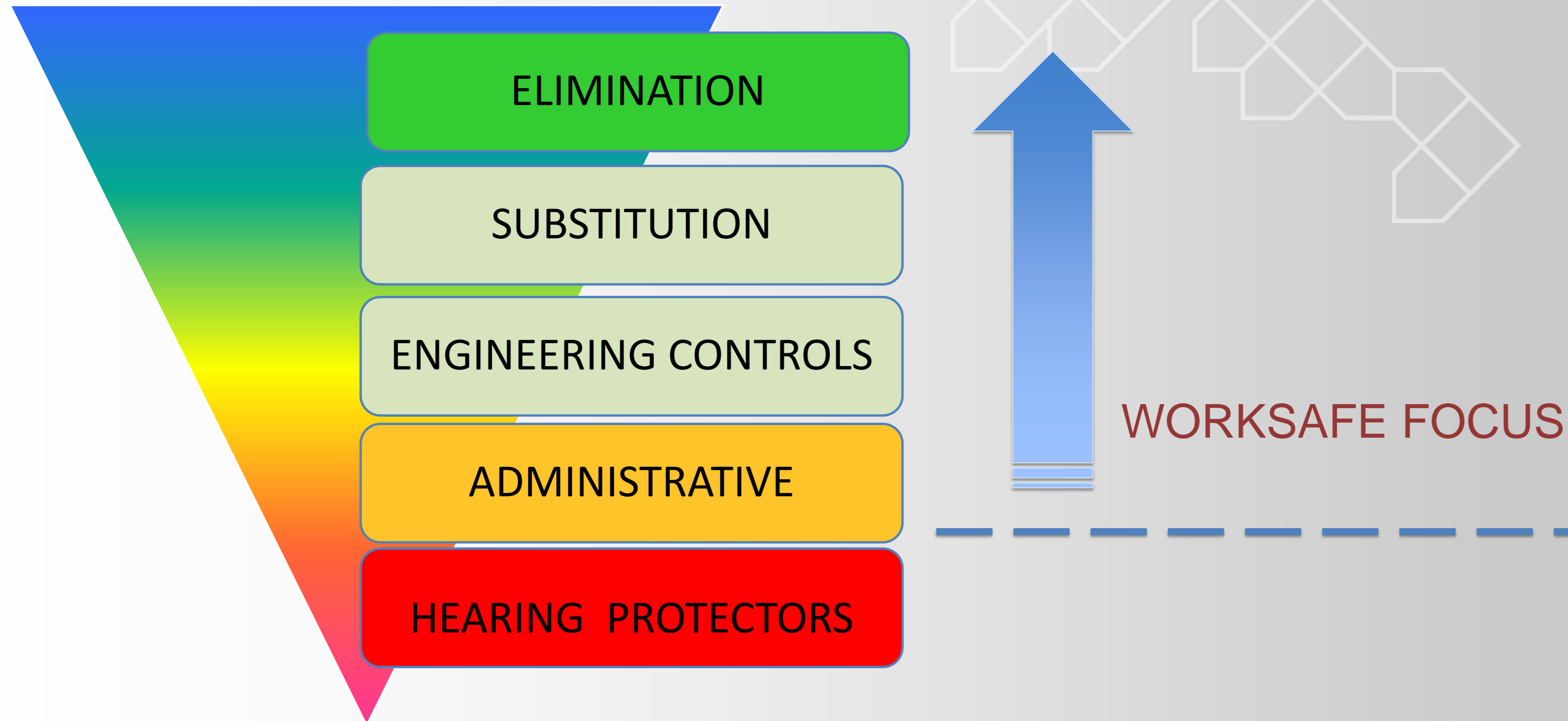
Noise Control – It's not as hard as you think!

Alex Simovski

Senior Occupational Hygienist

Worksafe Victoria

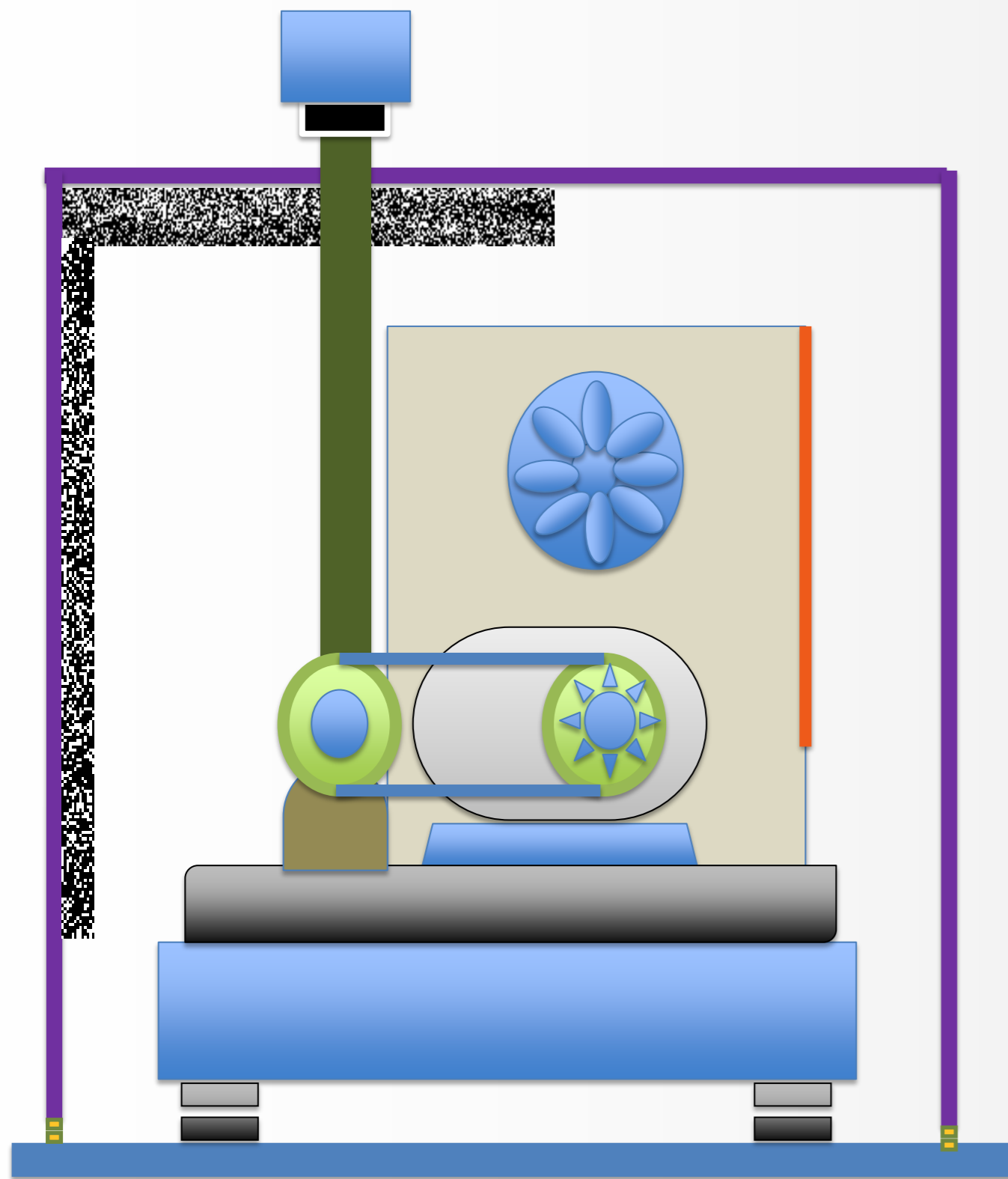
HIERARCHY OF CONTROLS [OHS REGS 2007]



NOISE CONTROL DEMONSTRATIONS

- Enclosures & barriers
- Fan & ventilation noise
- Compressed air noise
- Impact, vibration & materials handling noise
- Circular saws
- Grinders

ENCLOSURES & BARRIERS



- Enclose noise source or operator (eg control room)
- Select suitable materials (eg sheet metal, glass, perspex, masonry, MDF)
- Line at least 50% internal area with absorbent material (eg 50mm high density foam, glass wool ,rockwool)
- Protect absorbent material if required (eg thin plastic or perforated sheetmetal (min 25% open))
- Seal / minimise any gaps
- Install vibration isolation mounts
- Avoid rigid connections b/n machine, ducts, pipes & enclosure
- Ensure any hatches / doors / windows are well sealed
- Line access/ventilation chutes with absorbent material (min 3X Duct diam)
- Use quiet fans if mechanical ventilation required
- Move any controls outside enclosure

FAN & VENTILATION NOISE



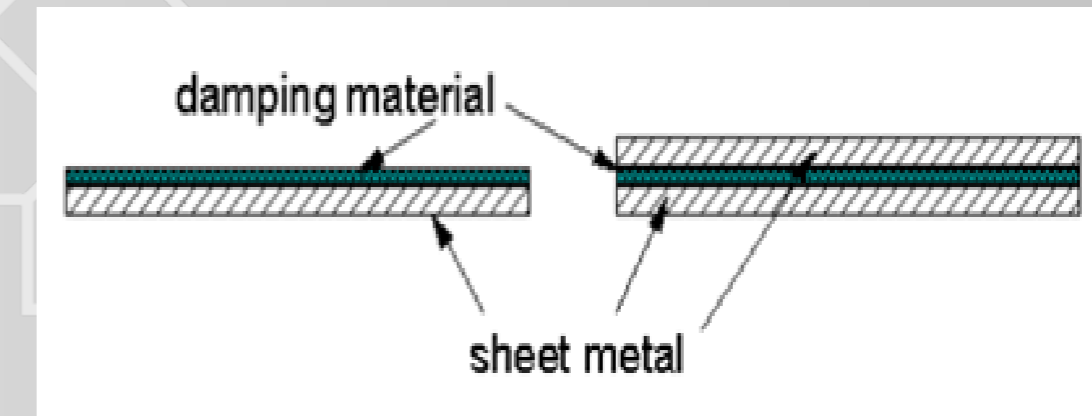
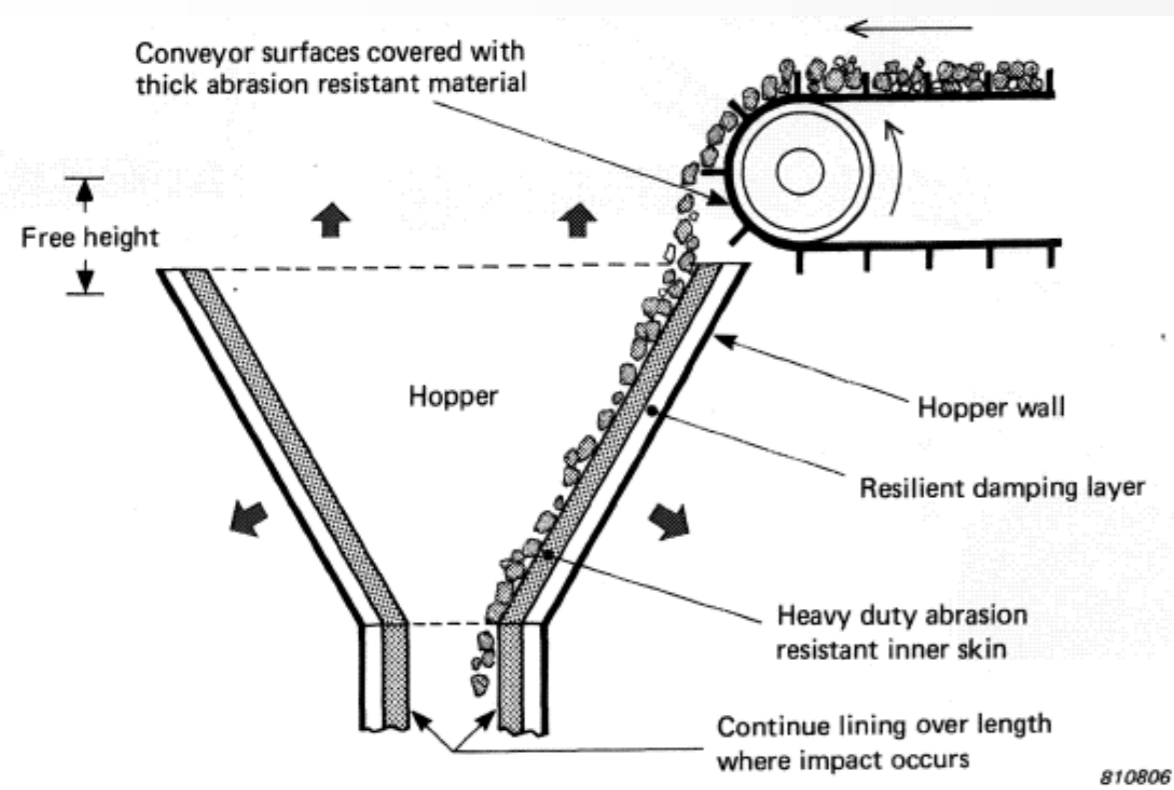
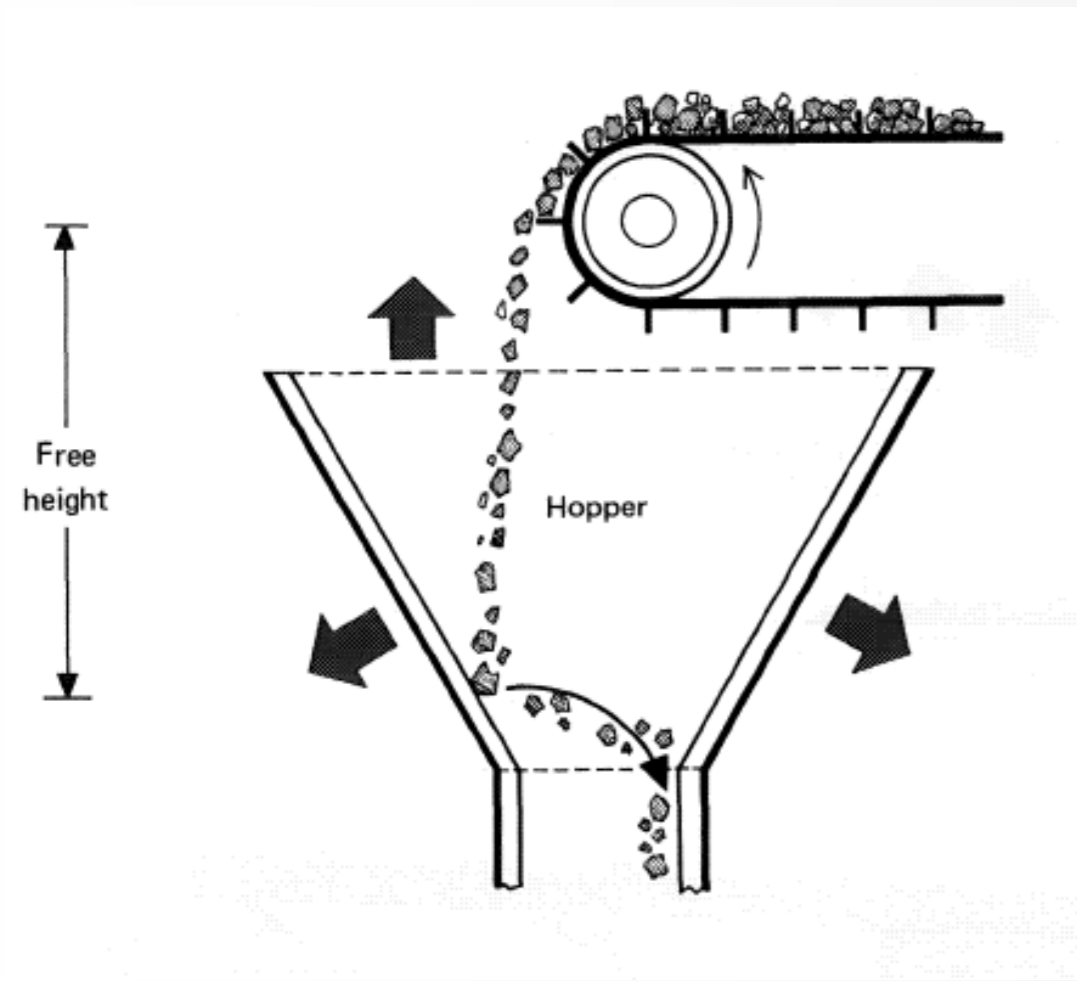
- Quieter fans (eg different blade profile, backward curved)
- Reduce fan speed (eg 20% slower – 5 dB reduction)
- Acoustically lined duct silencer
- Isolation mounts & flexible connections
- Dampen fan casing / thicker casing
- Improve ductwork layout for smoother/quieter flow
- Maintenance (motor, shaft, bearings, belts, tighten etc)

COMPRESSED AIR

- **Compressor**
 - purchase quiet compressor (eg screw type)
 - modify / relocate / enclose
 - install isolation mounts
- **Jet air noise**
 - reduce velocity
 - use quiet compressed air gun / nozzle
- **Pneumatic exhaust**
 - silencers / quiet nozzles / expansion chambers / mufflers
 - re-direct exhaust air outside

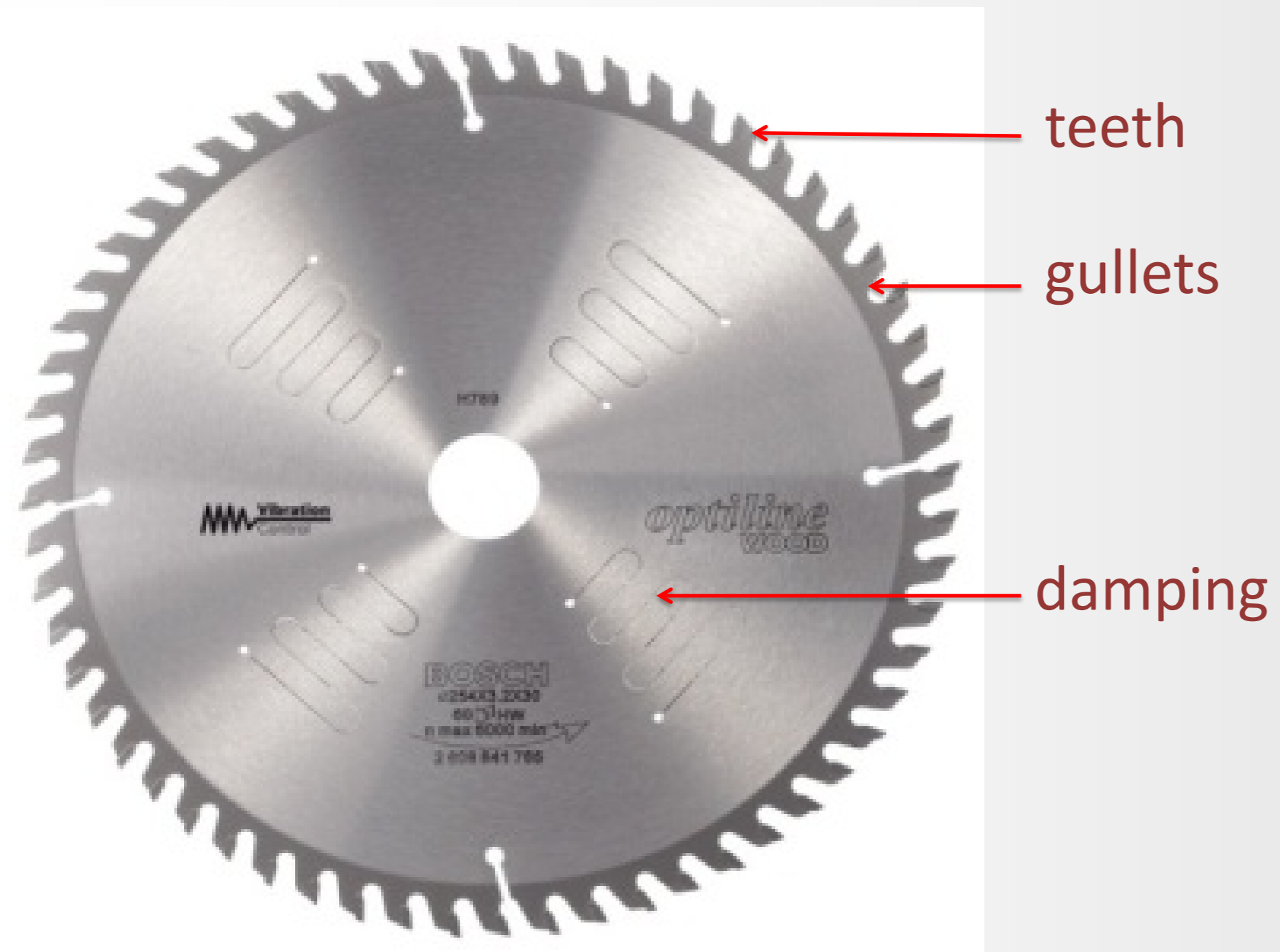


IMPACT, VIBRATION & MATERIALS HANDLING NOISE



- Reduce transfer speeds
- Reduce drop height / angle impact
- Cushion impact (eg rubber liner)
- Dampen metal panels, chutes, hoppers (single / sandwich)
- Stiffen/brace vibrating panels & dampen
- Change nature of materials (wire mesh, plastic, heavier material)
- Install isolation mounts / flexible connections
- Clamp materials being cut /ground/impacted
- Use conveyors that prevent transported objects striking each other
- Use inherently dampened gears that mesh well (brass/helical)
- Use conveyor belts instead of metal rollers (generally quieter)
- Increase mass of work benches to deaden impact noise
- Use cutting edge tooling on punch presses to reduce impact

CIRCULAR SAWS



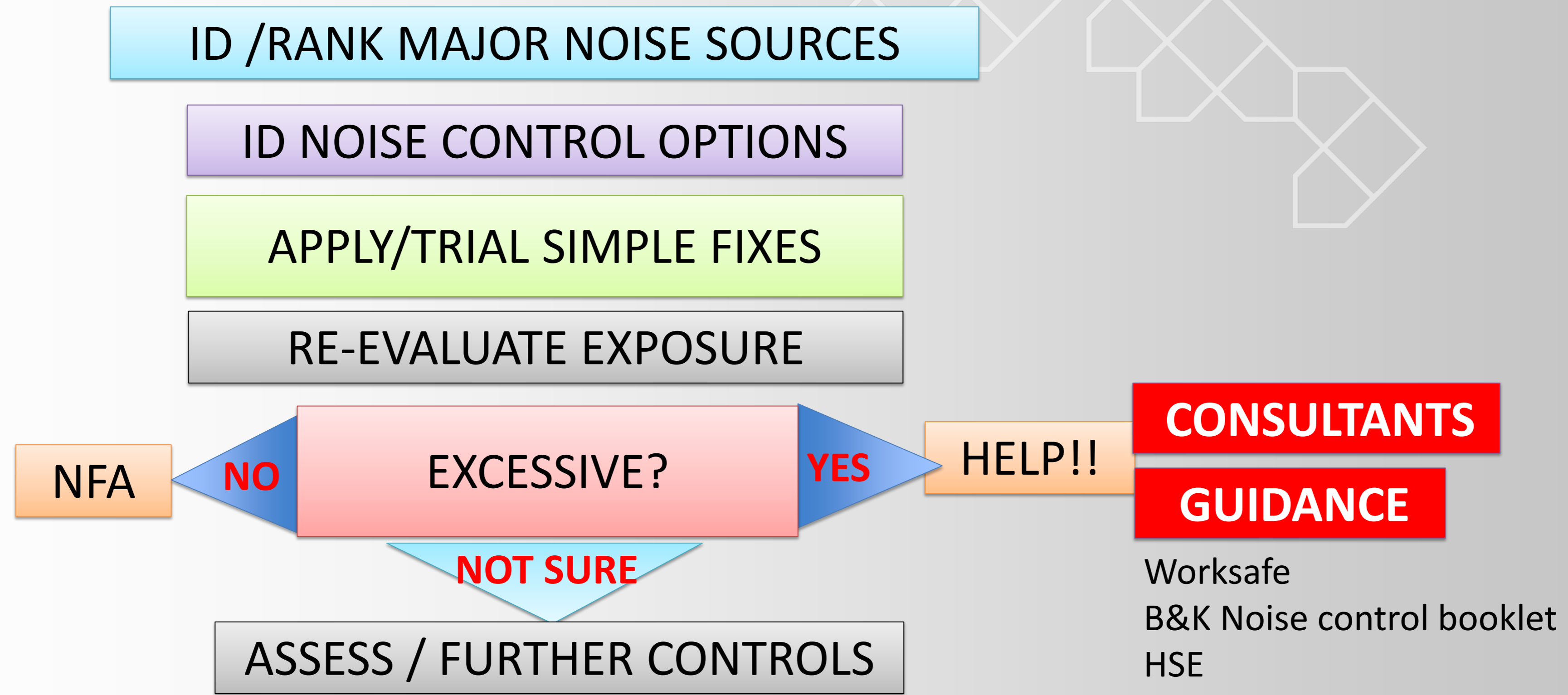
- Use quieter cutting process (eg guillotine, power hack saw)
- Purchase pre-cut to eliminate/reduce need for cutting
- Use quieter saw (more teeth, smaller gullets, dampened)
- Use saw with quieter motor
- Tungsten carbide teeth– stay sharper longer
- Relocate noisy cutting work
- Clamp work-piece (eg aluminium extrusions)
- Full / partial enclosure or barriers
- Sharpen /lubricate / maintain saw
- Guards may be acoustically lined on some saws

GRINDERS



- Review/improve process to eliminate/reduce need for grinding
- Use smaller grinders
- Quieter grinder, discs or lisher
- Clamp/dampen work piece
- Barriers to screen direct noise
- Relocate noisy grinding process
- Reschedule noisy grinding work
- Job rotation to reduce duration of exposure
- Hearing protection

WHERE DO I START?





Thank you.

