

CASE STUDY



UPGRADE NON-POWERED RESPIRATOR TO AIMWELL™ AYO™ WX PAPR

OVERVIEW

For daily strenuous work in dusty and hazardous environments, such as those with silica dust and asbestos, non-powered respirators cannot provide adequate protection.

A PAPR is more suitable here; however, its typical high cost and poor mobility have been hindering its use.

This case study, in contrast, identifies Aimwell™ AYO™ WX HFM Half-Face Mask PAPR System as an upgrade to non-powered respirators with a cost saving, plus additional benefits coming with it, such as beard compatibility, eliminating fit testing, and enhancing productivity.

OBJECTIVES

Identify a PAPR meeting the following requirements:

- Better protection than non-powered respirators.
- Costs less than a typical non-powered respirator.
- No hose, no belt, not top-heavy, not front-heavy.
- Compatible with facial hairs/beards.
- No need for fit testing.



AT A GLANCE

Challenges

- Non-powered respirators cannot provide adequate protection during high-exertion work: respirators lose seal due to movement, sweating, and facial shifts.
- Non-powered respirators are hard to breathe during high-exertion work.
- High cost and poor mobility of typical PAPRs.
- Non-powered respirators require fit testing.
- Non-powered respirators cannot be used for workers with beards.

Benefits of Aimwell™ AYO™ WX

- Effective protection from silica dust and asbestos.
- Cost savings.
- Eliminated Fit Testing.
- Compliance with facial hair.
- Enhanced productivity.

COMPARISON

- 3M 6200 with 2135 P2/P3 particulate filter
- Aimwell™ AYO™ WX HFM Half-Face Mask PAPR System



3M 6200 with 2135 P2/P3 particulate filter



Aimwell™ AYO™ WX
HFM PAPR System



Aimwell™ AYO™ WX
P3 Main Filter



Aimwell™ AYO™ WX
Pleated Pre-filter

PROTECTION

| Product | Standard | Nominal Protection Factor (NPF)/Applied Protection Factor (APF) | |
|---------------------------|---------------------------|---|-----------------------|
| | AS/NZS1716:2012 | Clean-shaven (Fit Test) | Facial Hairs (Beards) |
| 3M 6200 | P2: Total leak 8% | 50/10 | 0 |
| Aimwell™ AYO™ WX HFM PAPR | PAPR P3: Total leak 0.05% | 2000/50 | 500/50 |

- Total Inward Leakage: Aimwell™ AYO™ WX is 160 times better than 3M 6200.
- APF (Clean-shaven): Aimwell™ AYO™ WX is at least 4 times better than 3M 6200.
- Sensitivity to leaks during high exertion: 3M 6200 very high, Aimwell™ AYO™ WX very low.
- Facial hair compatibility: Aimwell™ AYO™ WX can still maintain high protection, while 3M 6200 provides no protection.
- Fit Test: 3M 6200 requires, Aimwell™ AYO™ WX does not.

COST

| Product | Initial Cost (RRP) (AUD) | Fit Test Cost (AUD) | Days to Replace | 12 Months Filter Cost (AUD) | 12 Months Total Cost (AUD) |
|---|--------------------------|---------------------|-----------------|-----------------------------|----------------------------|
| 3M 6200 Mask | \$45.00 | | | | |
| 3M 2135 P2/P3 Particulate filter (pair) | \$25.00 | | 5 | \$1,175.00 | |
| 3M 6200/2135 System | \$70.00 | \$100.00 | | | \$1,345.00 |
| Aimwell™ AYO™ WX P3 Main Filter | \$21.20 | | 20 | \$233.20 | |
| Aimwell™ AYO™ WX Pleated Pre-filter | \$3.10 | | 2 | \$371.30 | |
| Aimwell™ AYO™ WX HFM Half-Face Mask PAPR System | \$558.80 | | | | \$1,163.30 |

- After one year, Aimwell™ AYO™ WX has a lower total cost than 3M 6200.

MOBILITY/WEARABILITY

Around-neck structure allows the Aimwell™ AYO™ WX:

- No hose
- No belt
- Not top-heavy (no heavy parts on top of the head)
- Not front-heavy (no heavy parts on the mask)

RESULT

- Easy to don and doff
- Well-supported Main Unit
- Worn like a non-powered respirator
- Can work in confined spaces

BENEFITS OF AIMWELL™ AYO™ WX

- Enhanced protection against silica dust and asbestos.
- Much better effective protection during high-exertion work than non-powered respirators.
- 100% Compliance: can work with beards and still achieve very high protection.
- Costs less in a year than a non-powered respirator if used daily in high-dust worksites.
- Eliminated Fit Testing: saved hours of administrative tasks and fit testing costs.
- Enhanced productivity: less breathing effort and more comfortable to breathe for high-exertion work and long hours.